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Feed

Outlook and Situation Report

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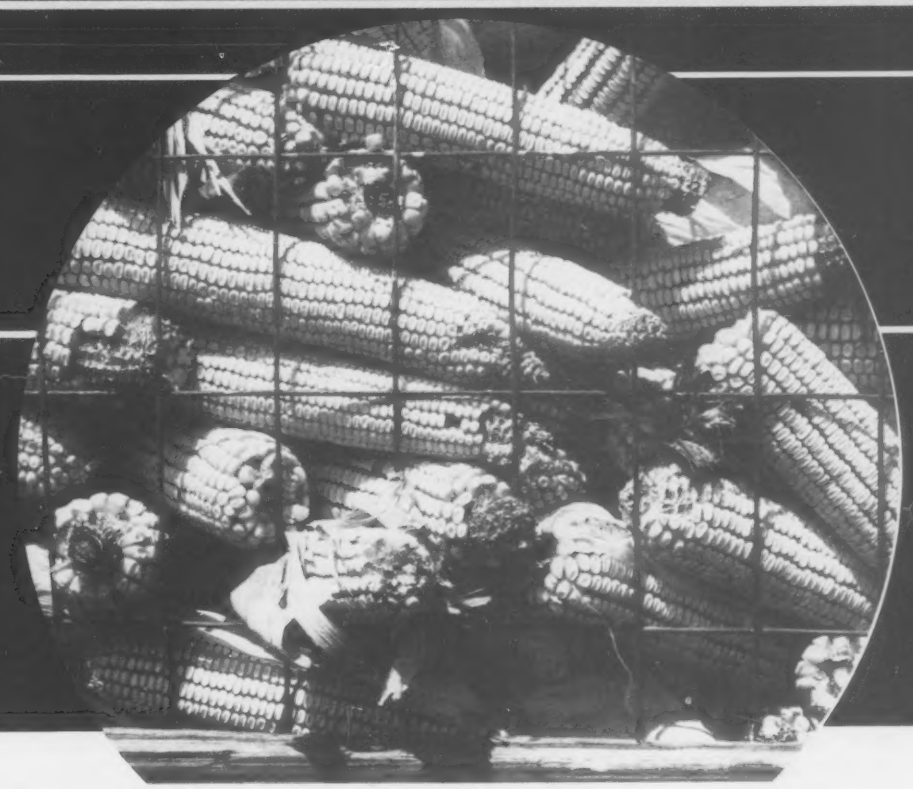
Weighing Participation in the 1983 Corn Program, Page 8



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Summary

Cash and futures prices for corn strengthened significantly after the payment-in-kind (PIK) program was announced January 11 and also as free stocks began to tighten. By mid-February, corn cash prices were about 30 cents a bushel above those of early January, and futures prices for the nearby delivery months were up 30 to 35 cents. The increases reflect heavy movement of corn under loan in January (500 million bushels) and also expectations that participation in the acreage reduction and PIK programs for feed grains will be moderate to heavy. Unless actual participation, which will be reported March 22, proves these expectations wrong, cash corn and sorghum cash prices should continue to rise during the spring and summer.

The supply of feed grains for 1982/83 now stands at 326 million metric tons. Disappearance is expected to total 216 million, leaving carryover stocks of 110 million, 55 percent larger than in 1982.

Corn stocks on January 1 were 8.4 billion bushels—1.45 billion more than a year earlier. However, 2.8 billion bushels of this year's stocks are isolated from the market in Commodity Credit Corporation inventory, the farmer-owned reserve (FOR), or under regular loan. A year earlier, only 1.6 billion were isolated. Consequently, free stocks on January 1 were up only about 215 million bushels from last season. They are expected to be tight enough this spring and summer to keep corn prices firm.

Free stocks of sorghum on January 1 totaled approximately 345 million bushels—100 million less than a year earlier and the lowest since January 1958. Free stocks likely will become extremely tight by June, but corn prices probably will keep sorghum prices from triggering release of the FOR. Moreover, new-crop sorghum will ease the supply situation in late June and July.

The supply of barley for 1982/83, at 682 million bushels, is 9 percent larger than last year. Barley use has lagged that of a year earlier because of reduced exports. Exports for the balance of the crop year will likely stay below last year's shipments, but feed use is expected to be up slightly. However, carryover stocks will be about 65 percent larger than in 1981/82 and the largest since 1969/70.

Although the supply of oats for 1982/83 is 12 percent larger than last year, feed use to date is down from the corresponding period last season. Oat prices during June-January averaged about 36 cents a bushel below a year earlier, but they were still high relative to corn.

Record hay supplies have resulted from the 152.4-million-ton harvest in 1982, an all-time high. The index of roughage-consuming animal units (RCAU's), an indication of hay demand, is down slightly from 1981/82. Despite the RCAU decline and the record supply, hay prices during May-January averaged $68.78 a ton—$2.52 above the same period of last season.

The index of grain-consuming animal units for 1982/83 is about 1 percent above that for 1981/82. The categories showing the largest increase are dairy cows, cattle on feed, and broiler and turkey production. There are decreases in hogs fed, egg production, and the number of "other cattle" on hand. Livestock/feed price ratios are expected to average higher this year and likely will result in more intensive feeding.

Food, seed, and industrial (FSI) use of corn is expected to reach a record 900 million bushels in 1982/83, an 11-percent rise. Growth in fuel alcohol demand and increased use of high fructose corn syrup are pushing FSI use up.

World production of coarse grains is record large in 1982/83 as a result of record yields—area harvested dropped about 2 percent. Greater production in major importing countries has been partly responsible for a substantial drop in world coarse grain trade this year, which is forecast at 92 million tons, one-tenth below last year. The largest contributor to the drop is the Soviet Union, whose imports likely will be only half those of 1981/82, falling to the lowest level since 1978/79. In the developed foreign countries, low livestock prices are expected to cut feed grain use 2 to 3 percent. In the developing countries, feed use may rise 4 percent—half of the increase realized last year. World carryover stocks in 1982/83 may increase by more than one-third, to 151 million tons, with the United States holding about 75 percent of the total.

Situation and Outlook for Feed Grains

Feed Grain Supply and Utilization

Feed Grain Supply Revised Upward

The total supply of feed grains for the 1982/83 marketing year is now placed at 326 million metric tons—up about 1 million tons from last fall's estimate. The increase in the estimated size of the 1982 feed grain harvest more than offset a 2.9-million-ton reduction in beginning stocks. Most of the production rise came from 82 million bushels added to the corn crop, although sorghum, barley, and oat estimates also rose sharply.

Expected Use Slightly Lower

Total feed grain disappearance for 1982/83 is now estimated at 216 million tons—7 million below last October's forecast but 2 percent more than the 212 million tons used in 1981/82. Feed and residual use is forecast at 128.8 million tons; food, seed and industrial use, 28.1 million; and exports, 59.4 million. These estimates are up 0.9 million, 2.3 million, and 0.8 million, respectively, from 1981/82.

Because feed grain supply was revised upward and estimated disappearance downward, 1982/83 carryout stocks are now expected to be 5.2 million tons above earlier estimates. Ending stocks are now forecast at 110 million tons, 55 percent above the beginning level.

January 1 Stocks Sharply Higher

January 1 stocks of feed grains totaled 250 million metric tons, reflecting disappearance of 70 million of the 320 million available for October-December. A year earlier, disappearance came to 69 million tons, leaving stocks of 207 million on January 1, 1982.

Feed and residual use for October-December this season amounted to 48.8 million tons, compared with 47.4 million the same quarter a year earlier. Food and industrial outlets required 5.9 million—up 600,000 from 1981. In contrast, exports fell 1.7 million tons from a year earlier, totaling 14.9 million.

Approximately 85.6 million tons of January 1 stocks were isolated from the market in the farmer-owned reserve (FOR), under regular Commodity Credit Corporation (CCC) loans, or in CCC inventory. This left free stocks of 166.4 million tons. This amount appears adequate for expected needs of 146.0 million for the balance of the current marketing year, unless large quantities go into the reserve or under loan during late winter or spring. Despite heavy reserve activity so far this season, January 1 free stocks still exceeded the year-earlier level of 159.1 million tons.

Corn

PIK Announcement, Tighter Free Stocks Push Up Corn Prices

The President announced a payment-in-kind (PIK) program for corn and sorghum on January 11. Although the PIK program will impact supplies and prices primarily during 1983/84, the announcement resulted in a decrease in farmers' willingness to sell, or a decrease in supply in the economic sense. The price of corn at St. Louis averaged about a nickel a bushel higher the week after the announcement, and by the end of January it was up more than 20 cents. Corn futures prices at Chicago also strengthened, with March and May settlement prices 20-25 cents a bushel higher at the end of January than they were early in the month.

Corn prices also were strengthened in late January and early February by tightening of free stocks as additional corn was placed in the FOR. As of early February, over 2.5 billion bushels of corn were in the reserve. By mid-February, the cash and future prices were up about 15 cents a bushel from late January.

Futures prices for the remaining delivery months in 1982/83 imply a steady seasonal rise in cash corn prices, with the increase outstripping the cost of storage from January to each respective delivery month. If cash prices follow the futures prices' path, use may total less than now forecast, further boosting estimated carryover stocks.

Stock and Production Revisions Offset Each Other

Last November, the corn supply for 1982/83 was estimated at 10,682 million bushels, based on a carryover of 2,366 million, an estimated harvest of 8,315 million, and imports of 1 million. The January Grain Stocks report revised carryover stocks downward by 80 million bushels and the January Crop Production report revised the 1982 corn crop upward by 82 million—resulting in a net increase of only 2 million bushels in the corn supply estimate.

A drop in exports and a rise in feed use have partly offset one another in the use forecast. The export forecast has been reduced 200 million bushels since last November and estimated feed and residual disappearance has been increased by 100 million. Therefore, based on early February data, corn use for 1982/83 is expected to total 7.25 billion bushels—100 million less than forecast last November. The net result of all the revisions in the supply and use estimates is an increase of 100 million bushels in expected carryover next October, to a total of 3,434 million.

Lagging Exports Spell Slightly Lower First-Quarter Use

Total disappearance for October-December amounted to 2,261 million bushels—nearly the same as a year earlier. Domestic disappearance was up by 25 million bushels, but exports of 513 million were down 33 million.

Food, industrial, and alcoholic beverage use of corn was almost 192 million bushels in October-December—about

22 million more than processed a year earlier. High fructose corn syrup and fuel alcohol accounted for most of the gain. Feed and residual use exceeded year-earlier disappearance by only 3 million bushels.

Will Free Stocks Be Adequate This Summer?

First-quarter disappearance left 8.4 billion bushels of corn on hand January 1—1.45 billion more than a year earlier. However, most of the increased stocks are under loan or in CCC inventory; January 1 free stocks were only about 215 million bushels larger than last year.

Corn stocks on January 1

Item	1982	1983
	Million bushels	
Total stocks	6,968	8,423
CCC inventory	244	429
Private	6,724	7,994
FOR	652	2,050
Under loan	694	350
Free	5,378	5,594

Total disappearance of corn for 1982/83 is estimated at 7.25 billion bushels. Use during the first quarter amounted to almost 2.3 billion bushels, leaving a balance of about 5 billion for January-September. About 3.1 billion bushels likely will be used by June 1 and the remaining 1.9 billion during June-September. This implies June 1 stocks of 5.3 billon bushels, of which 2.8 billion were isolated from the market on January 1. The tightness of free stocks by June 1 will depend mainly on what happens to CCC inventory, FOR, and regular CCC loans between January and June.

About 2.1 billion bushels of the 1982 corn crop were in compliance with the feed grain program, and therefore are eligible for the FOR or a regular CCC loan. By January 1, about 870 million bushels of 1982-crop corn had been put under loan (FOR and regular). An additional 500 million bushels were placed under loan during January. Of the total under loan by the end of January, about 83 percent was in the FOR and only 17 percent was under the regular 9-month loan. Further, of the corn that went under loan in January, 88 percent went directly into the FOR. Last year, by contrast, about 42 percent of the corn under loan at the end of January was in regular loans.

Corn under the regular loan can come back onto the market at lower prices than corn in the reserve. The regular loan rate on 1982-crop corn is $2.55 a bushel and interest accrues at about 1.9 cents per bushel per month, whereas the release price for 1982 reserve corn is $3.25 a bushel.

The regular loan rate for 1981 corn was $2.40 a bushel, and during the first half of the year interest accrued at approximately 2.7 cents per bushel per month. Seasonal price strength during the late winter and spring led to the redemption of about 235 million bushels from regular loan during February-June 1982.

The amount of corn that went under loan this January suggests that free stocks on June 1 could be down to 1.8 billion bushels, provided the forecast January-May disappearance of 3.1 billion bushels is realized. Free stocks of 1.8 billion would spell a firm corn market for June-August, but likely would not trigger release of either 1981 or 1982 reserve corn.

The following developments would tend to ease the supply situation during June-September:

- The recent rise in corn prices could slow placement of corn under loan.
- The rising price of corn would stimulate redemption of corn under regular loan not pledged for the PIK program.
- Utilization of corn could drop off in response to rising prices.
- The feed grain supply will be augmented by new-crop sorghum, barley, and oats in July and August, and new-crop corn in August and September.

On the other hand, to trigger the 1981 reserve this summer (requiring prices of $3.15 per bushel), several of the following developments would be necessary:

- Use of corn during January-September turns out to be 5.2 billion bushels or more, compared with the 5 billion now expected.
- Much of the remaining eligible corn is placed in the reserve during February-May.
- Most of the corn in regular loans is pledged for PIK requirements.
- Harvests of corn and sorghum crops in the early harvest areas are 2 or 3 weeks behind normal.
- Growing conditions indicate low 1983 yields.

Sorghum

January 1 Free Stocks Lowest Since 1958

January revisions to carryover stocks and the 1982 sorghum crop estimate increased the expected supply for 1982/83 to 1,138 million bushels, 25 million more than the estimate last October. Disappearance during October-December totaled 345 million bushels, leaving 793 million on hand January 1—103 million above a year earlier. However, more than half of stocks on hand this year were in CCC inventory or under loan, leaving only 345 million bushels free—100 million less than free stocks last January and the lowest since January 1958.

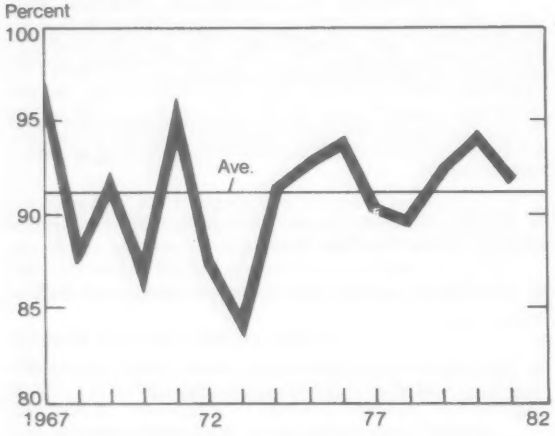
Sorghum stocks on January 1

Item	1982	1983
	Million bushels	
Total stocks	690	793
CCC inventory	38	47
Private	652	746
FOR	133	383
Under CCC loan	75	19
Free	444	344

An additional 62 million bushels of sorghum were put under loan (almost entirely in the FOR) during January, further tightening free stocks. Total disappearance for 1982/83 is estimated at 591 million bushels. Deducting the 345 million bushels already used during October-December leaves 246 million for use during January-September—63 million less than use during January-May last year. If disappearance for January-May this year is close to year-earlier use, free stocks will be virtually eliminated by June 1.

Redemption of sorghum from regular CCC loans is not likely to alleviate the tight free stock situation. In early February, only 14 million bushels of 1982-crop sorghum and 3.5 million bushels of 1981 sorghum were in regular CCC loans. Moreover, part of the sorghum under loan may be pledged for the PIK program.

Price of Sorghum as a Percentage of Corn Prices



However, the possibility that the tight free supplies will trigger the sorghum reserve appears remote. During 1967-81, the sorghum price per bushel averaged 91.2 percent of the price of corn, ranging from a low of 83.9 to a high of 96.2. Currently, the sorghum price is equal to the corn price—well above the historical relationship. The farm price of sorghum would have to rise to $3.00 a bushel to trigger the 1981 reserve, and before this occurred users likely would switch to corn. The tight supply situation will be eased in July as new-crop sorghum and PIK grain become available.

Barley

Barley Crop Revised Upward Slightly

The Annual Summary Crop Report revised the 1982 barley crop to 522 million bushels—an increase of 6 million from the preliminary estimate last October. The revision brought the total supply for the 1981/82 crop year to 682 million bushels, 9 percent above the previous year's supply.

Disappearance during October-December amounted to 85 million bushels—30 percent below the 121 million bushels for the corresponding period last year. A sharp drop in exports was the major factor, although feed and residual use was also off 8 million bushels. By January 20, accumulated export shipments and sales of barley totaled 41 million bushels, only 47 percent of a year earlier. Depressed world demand and a world crop 5 percent larger than in 1981/82 are responsible for the lagging sales.

Exports for the 1982/83 June/May crop year are estimated at 45 million bushels, compared with 100 million during 1981/82. Exports for June-December were 31.8 million bushels, leaving about 13 million bushels to be exported during January-May—about 38 percent of the export total during the same period last season.

Feed and residual disappearance was relatively large during June-September but then dropped off sharply during October-December. Total feed use for June-December was 139 million bushels—11 million above a year earlier. Feed use for the balance of the crop year is estimated at 76 million bushels, almost the same as last year.

Barley stocks on January 1 came to 419 million bushels—86 million more than a year earlier. This year, about 105 million bushels were tied up in CCC inventory, the FOR, and regular loans. However, the balance will be more than adequate to meet market needs for January-May. Carryover stocks are expected to be 245 million bushels—95 million larger than last year and the largest since 1969/70. Even with the stronger price for corn following the PIK announcement, feed barley supplies appear to be sufficient to preclude any seasonal strength between now and the new crop year in June.

The combination of a 9-percent larger supply and 10-percent lower total use the first half of the crop year has weakened barley prices substantially. The farm price during June-December averaged $2.16 a bushel, 14 percent below the $2.50 average for the same period last year. The price for malting barley at Minneapolis also has weakened in recent weeks, likely indicating that stocks are large.

Oats

The 1982 oat crop estimate has been revised upward to 617 million bushels—an increase of 18 million over last October's estimate. The increase pushed total supply for 1982/83 up to 770 million bushels, 12 percent larger than the 1981/82 supply of 688 million.

Disappearance for October-December amounted to 108 million bushels—14 million above the same quarter last year. However, because of the low rate of use during June-September, total disappearance for June-December, at 297 million bushels, still lags use for the first half of 1981/82 by 24 million bushels.

Feed use accounts for about 85 percent of the total disappearance of oats. Consequently, prices were under considerable downward pressure this year from the larger supply, decreased demand during June-December, and large supplies and low prices of other feed grains. The price received by farmers during June-December averaged $1.48 a bushel, compared with $1.84 for the comparable period in 1981/82. The average farm price reached a seasonal low of $1.32 last October, when feed grain prices

in general were under severe downward pressure during the harvest of the record corn crop.

The farm price of oats has exceeded the regular loan rate of $1.31 a bushel through the crop year to date. Consequently, an insignificant quantity of oats has been placed under regular loan or in the FOR. The price has already recovered sufficiently from the seasonal low to permit redemption of regular loans. However, it does not appear likely that prices will move high enough to trigger the oat FOR.

A total of 474 million bushels of oats were in storage, on and off farms, on January 1 of this year—almost a third larger than stocks a year earlier. With use for January-May projected to total 228 million bushels, carryover stocks next June 1 will be about 250 million—about 65 percent larger than in 1981/82. Consequently, any additional seasonal price recovery between January and the new crop year appears modest.

Hay

A record 152.4 million tons of hay was harvested in 1982 from 60.7 million acres. Excellent growing conditions resulted in a record yield of 2.51 tons per acre. However, rain during harvest decreased the quality of the crop in some areas.

Adding carryover stocks of 25.2 million tons to hay production yields a total 1982/83 supply of 177.6 million tons, 5.3 percent larger than last season's 168.7 million. Supply this season fell only marginally short of the record of 177.9 million tons set in 1979/80.

Even with larger supplies, hay prices are stronger than in 1981/82. The average farm price for all hay for May-January was $68.78 a ton—$2.52 higher than the corresponding period of 1981/82. Similarly, the farm price for alfalfa hay averaged $74.26 a ton for May-January this year, compared with $69.38 a year earlier. Alfalfa prices were particularly strong during May-July 1982, but this past January they averaged only $2.20 a ton over the year-earlier price.

The index of roughage-consuming animal units for 1982/83 is 90.5 million—down 1.3 million from the 91.8 million units for 1981/82. However, the index of units for dairy animals and sheep, the main consumers of alfalfa hay, is up from 17.3 in 1981/82 to 17.5 for 1982/83.

FEED DEMAND

Grain-Consuming Animal Units Up Slightly

The index of grain-consuming animal units for the 1982/83 feed year (October-September) is 78.5 million units, slightly more than 1 percent larger than the 77.6 million units on hand for the preceding year. Dairy cow numbers, cattle on feed, and broilers and turkeys are the major sources of increase, partly offset by decreases in hogs fed, egg production, and the number of "other cattle" on hand.

The increase in dairy cows will be favorable for feed barley use, because the dairy industry is the largest single outlet for feed barley. The second most important outlet is cattle feeding, which is also up sharply.

The major users of oats are dairy cows and horses and mules (together comprising 64 percent of use in 1981/82). Both of these categories are up this year, indicating a likely increase in feed disappearance of oats. The three categories of grain consumption that are down for 1982/83 represented only 22 percent of the feed use of oats last year.

By contrast, the same three categories represented 37 percent of sorghum feed use and 50 percent of corn feed use in 1981/82. Consequently, the increases in grain-consuming animal units for 1982/83 will be relatively more favorable to barley and oats use than to corn and sorghum.

Feed Ratios Less Favorable

Feed grain prices last October and November were particularly depressed as corn harvest was at its peak and uncertainty as to the adequacy of storage space hung over the market. The average farm price of corn was $1.98 a bushel in October and $2.13 in November. At these prices, livestock/feed price ratios were favorable to increased livestock and poultry feeding.

When the corn harvest was completed, and no serious storage problem had developed, feed grain prices started to recover. Rapid movement of corn into the FOR also aided price recovery. The farm price of corn averaged $2.26 in December. Further price strength developed in January after the PIK program was announced. By the end of January, the price of corn in Central Illinois was $2.51 a bushel (Central Illinois prices have been close to the national average farm price). The hog/corn and steer/corn ratios at Omaha at the end of January were 23.5 and 23.9, respectively, compared with 27.0 and 28.5 in mid-October. Consequently, expansion of livestock and poultry does not appear as profitable now as last October, and feeding rates may not increase as much as expected earlier.

FOOD AND INDUSTRIAL DEMAND FOR CORN

Upward Trend in FSI Use Continues

Food, seed, and industrial (FSI) corn use is expected to reach 900 million bushels in 1982/83, up 89 million from a year ago. Greater demand for fuel alcohol and high fructose corn syrup (HFCS) will provide the impetus.

FSI use for October-December was 192 million bushels, up 13 percent from the first quarter of the previous year. Disappearance during July-September, typically the quarter of heaviest use, was about 270 million bushels, up 10 percent from 1981.

Around 60 percent of total FSI disappearance for the marketing year occurs between April 1 and October 1. One reason is that HFCS is difficult to store for long periods. Sweetener demand is greatest during the summer, when more soft drinks are consumed. This period also coincides with peak use by the canning and dairy industries.

HFCS and Fuel Alcohol Account for Over 40 Percent of FSI Use

A breakdown of FSI use by product shows that HFCS and alcohol (fuel, industrial, and beverage) are the prin-

cipal categories. HFCS and alcohol will likely account for over 40 percent of FSI use in 1982/83 and over 45 percent in 1983/84.

HFCS was the major growth product in the seventies, but the rate of growth is now slowing. The price competitiveness of HFCS has helped corn sweeteners capture close to 40 percent of the domestic sugar/sweetener market, compared with 17 percent 10 years ago. The beverage industry accounts for over 50 percent of HFCS sales and continues to account for the major portion of increases in HFCS use. However, once the soft drink industry reaches saturation—now expected by the mid-eighties—growth in HFCS consumption will likely be limited to population growth.

By that time, corn used for alcohol production may equal or surpass corn used for HFCS. Between 1979/80 and 1981/82, alcohol production increased by 150 percent. By 1984/85, output of alcohol may be double that in 1981/82.

Food, seed, and industrial use of corn[1]

Products	1979	1980	1981	1982*
		Million bushels		
HFCS	130	160	185	215
Alcohol[2]	50	70	125	180
Glucose & dextrose	180	182	185	186
Food products[3]	120	126	128	132
Starch	128	130	125	125
Beer	47	47	44	45
Seed	20	20	19	17
Total	675	735	811	900

[1]Year beginning October 1. [2]Fuel, industrial, and beverage alcohol. [3]Cornmeal, grits, flour, and cereal. *Forecast.

Most alcohol production goes for fuel use, which has increased in part because State and Federal tax rules have made gasohol (gasoline with 10 percent fuel alcohol) attractive. A 4 cent a gallon Federal tax exemption for gasohol is equal to 40 cents a gallon for fuel alcohol. An additional cent will be added to the exemption on April 1, 1983, raising the tax advantage for fuel alcohol to 50 cents a gallon.

Fuel alcohol sales also increased during 1982 because of growing demand for octane enhancers without lead. At the same time, falling corn prices reduced alcohol production costs, making fuel alcohol an attractive substitute for other octane enhancers.

To date wet millers have been producing a large proportion of the fuel alcohol. However, most of the new alcohol producing plants now coming on stream or proposed to come on stream over the next few-years are dry milled operations.

A small amount of alcohol, equivalent to 25-40 million bushels, is used in distilled beverages (such as bourbon) and food and industrial products (such as white vinegar, cosmetics, and pharmaceutical products). Nonfuel industrial use could grow rapidly in the eighties, depending on natural gas prices. Currently, most nonfuel industrial alcohol is a synthetic made from natural gas. However, production costs for fermentation alcohol are now very close to those for synthetic alcohol.

FSI Use Increases Relative to Total Use

FSI disappearance is expected to account for over 12 percent of total corn use in 1982/83, up from 8 percent a decade ago. However, FSI's share of market growth is larger—likely about 30 percent this season.

Similarly, in 1981/82, FSI use increased by about 76 million bushels. This was more than double the increase in feed use and helped to offset a concurrent decline in exports. Total FSI disappearance in 1981/82 was 811 million bushels, nearly double 1971/72 consumption in this category.

WORLD COARSE GRAIN SITUATION

World coarse grain production is record large in 1982/83, 3 percent above last year's harvest. Foreign production is estimated to be an alltime high, as record yields offset the 2-percent drop in area. Output expanded in most major Northern Hemisphere producing areas except Mexico and India. Early prospects point to a shortfall in Southern Hemisphere crops. Severe drought struck Australian barley and sorghum, and South Africa's corn has suffered from drought again this year. With area down and weather poor, Argentine corn and sorghum production will likely fall.

After 3 years of being depressed, world coarse grain use is expected to increase 2 percent, about equaling the 1978/79 record. However, because of larger harvests in major importing regions, world trade will contract. Trade during July 1982-June 1983 is forecast at 92 million tons, down from 103.6 million last year and 105.5 million in 1980/81. Soviet imports are projected at 13 million tons—the smallest volume since 1978/79. Eastern European imports are very low. Imports of the developed countries may also decline this season, but imports of the developing countries will increase significantly.

Soviet Imports May Drop; Little Gain in Use Likely

Soviet coarse grain use in 1982/83 is estimated to be unchanged from a year earlier. Production rose 13 million tons, but imports have been slow and may drop to only half the 1981/82 level. The Soviets have larger supplies of forage and wheat for livestock feeding, and they are importing more soybean meal. In China, use will rebound sharply because of the recovery in output and larger imports. Eastern Europe's record crop will allow recovery in use there too, even though imports will likely decline to about 4.5 million tons, substantially below recent years. Poland and East Germany are trying to arrange credit and barter deals to import grain without using hard currency.

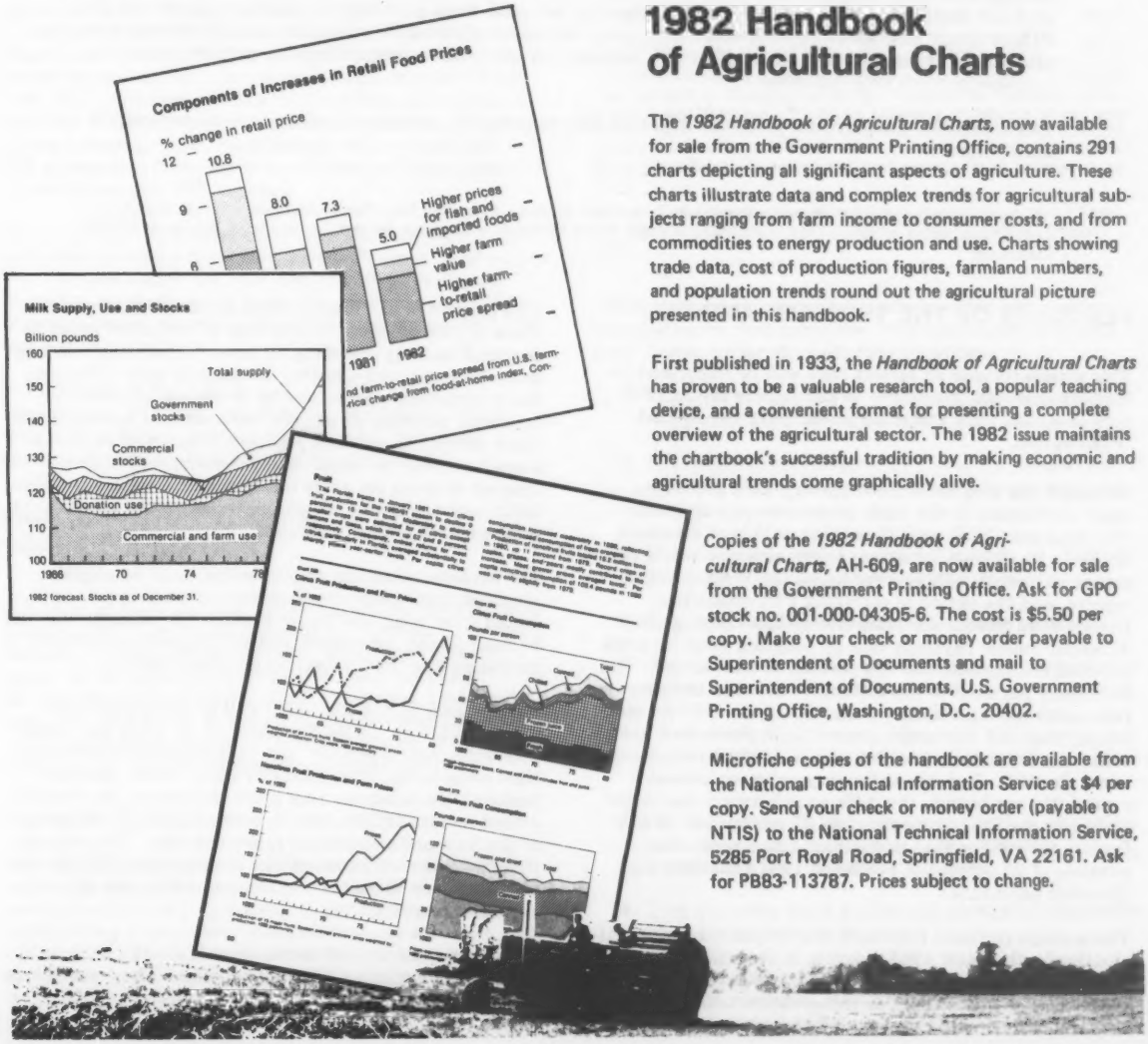
In the foreign developed countries, feed use of coarse grains may decline an additional 2 to 3 percent. Little gain is expected for other uses. Weak demand has reduced livestock product prices in many areas. Feed use in the Common Market (EC) is estimated down 7 percent—the fourth year of decline. EC imports are down significantly. Following several years of rapid growth, feed use in Spain may decline 4 percent, since hog numbers dropped 5 percent in 1982 and may drop a similar amount in 1983. Spain's coarse grain imports will likely fall sharply in 1982/83. In Japan, use may decrease 3 percent, but imports may be near 1981/82 levels.

Following a 5-percent jump last year, coarse grain use in the developing countries may increase less than 1 percent in 1982/83, mainly due to crop shortfalls in India and Mexico—two of the largest users. Feed use in the developing countries may rise about 4 percent, compared with 8 percent in 1981/82. Mexico will expand its imports substantially to offset its poor crop; most of the imports will be made through the CCC loan guarantee program. Venezuelan imports will likely decline from last year's record. Imports of Taiwan and South Korea are forecast up 4 percent and 18 percent, respectively. Smaller gains are anticipated for other markets in the Far East. Saudi Arabia's imports will continue to expand rapidly. Egyptian imports are forecast up 15 percent and feed use may grow by a tenth.

U.S. Exports Facing Strong Competition

With world trade volume shrinking, the export market is highly competitive. Canada harvested a record coarse grain crop, but its exports are forecast to decline because of the weak world import demand and heavy wheat shipments. Reflecting a poor crop, Argentine exports will be down about 15 percent during July 1982-June 1983, but they will be the second largest ever. Australian, Thai, and South African exports are also expected to be down. The U.S. market share may be slightly above 1981/82's 59 percent but well below the 69 percent of 1980/81.

World carryover stocks may reach 151 million tons in 1982/83, almost double the 1980/81 level. U.S. stocks account for all the accumulation anticipated this year. Because of their limited import program, the Soviets are not expected to increase their stock level. With improved grain production, Poland may be able to rebuild stocks. Canadian stocks will likely rise. Carryover stocks of the developing countries are expected to drop a fifth—almost 3 million tons.



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Weighing Participation in the 1983 Corn Program

by

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ABSTRACT

This article evaluates the economics of participating in the 1983 corn program, with and without the payment-in-kind option. A producer's expectations of corn prices and yields are the most crucial factors. If the compliance rate is low and yields are normal (a low-price scenario), participants in the acreage reduction/paid diversion program would enjoy sizable benefits. Conversely, if signup is large or if yields are low (a high-price scenario), potential net gain from participation declines. However, the PIK program adds extra participation incentive: the value of the PIK commodity and the decrease in production expenses more than offset the decrease in grain sales and deficiency payments and the increase in cover crop expenses.

KEYWORDS: Feed grains program, expected net returns, net-returns-equalizing price, payment-in-kind program.

[1]The authors are grateful for insights and comments from Milton Ericksen, Larry Van Meir, George Rockwell, and Stan Daberkow of ERS, USDA, and from Royce Hinton and Allan Mueller of the Cooperative Extension Service, University of Illinois at Urbana-Champaign.

FEATURES OF THE 1983 ARP AND PLD

This article focuses on factors that will be important to farmers in deciding whether to participate in the 1983 corn program, with and without the payment-in-kind (PIK) option.

Although the programs are voluntary, corn producers must participate in the basic 10-percent acreage reduction program (ARP) and 10-percent paid land diversion (PLD) to be eligible for acreage diversion payments, deficiency payments, nonrecourse loans, the farmer-owned reserve, and the option of receiving PIK quantities. Diversion payments are computed by multiplying the $1.50-per-bushel payment rate by program yield by acres diverted from production (10 percent of base acres). The deficiency payment is the difference between the average farm price during the first 5 months of the 1983/84 marketing year and the target price—$2.86 per bushel for corn—times program production (established yield times acres planted). But, the deficiency payment cannot exceed 21¢ per bushel, the difference between the target price and the CCC loan rate of $2.65 per bushel. A new feature for 1983 is that participants may receive an advance of 50 percent of projected 1983 deficiency and diversion payments.

The acreage removed from corn production through participation in the basic 1983 program is determined in two steps. First, participants must divert 10 percent of the farm's corn-sorghum base to conservation uses. Second, they must also reduce acreage by an amount equal to 12.5 percent of the area planted to corn and sorghum. Thus, a corn producer with a base of 100 acres could be in compliance by diverting 10 acres for payment, setting aside 10 acres, and planting 80 acres of corn. This producer could also participate by diverting 10 acres for payment, planting 40 acres of corn, setting aside 5 acres (12.5 percent of 40), and planting 45 acres of soybeans. Compliance in the latter manner would reduce the number of acres set aside but would also reduce possible deficiency payments, which are based on the acres of the program crop actually planted.

The acreage taken out of production must be eligible cropland that is devoted to conservation uses and protected from wind and water erosion. The acreage may not be mechnically harvested, and grazing will not be permitted during the 6 principal growing months.

Participants in the corn ARP will be eligible for a 9-month CCC loan on 1983 production, at $2.65 per bushel. Producers may repay the loan plus accrued interest any time prior to the final maturity date. When the loan matures, the producer may place the corn in the farmer-owned reserve (FOR), turn it over to the CCC in payment of the loan and interest, or repay the loan. The interest rate on 1983 corn loans will be that charged CCC by the U.S. Treasury (9 percent in January 1983) and will be adjusted monthly.

Corn harvested in 1983 is not eligible for the FOR until the regular 9-month CCC loan matures. The reserve loan rate for 1983 is the same as the regular loan, $2.65 a bushel.

FEATURES OF THE PIK PROGRAM

Farmers who have signed up for the basic program for corn-sorghum may sign up for PIK by March 11, 1983, and divert an additional 10 to 30 percent of their acreage base. They can also submit a bid to divert the whole crop acreage base, which would mean 10 percent paid diversion and 90 percent PIK. Under the 10-30 percent PIK, participants with outstanding CCC loans (FOR and regular) will receive their loan collateral as their PIK payment. Producers without loans will receive corn from CCC-owned stocks in warehouses in their county or adjoining counties. CCC also reserves the option to require farmers to take out a loan on part of their 1983 production to be used for PIK. The PIK amount received will be 80 percent of what the acreage would have produced at the assigned farm program yield.

Under the whole-base diversion option, the participant must submit a sealed bid specifying the percent of the farm program yield that would be acceptable as compensation for participation. CCC reserves the right to reject any or all bids. The Agricultural Stabilization and Conservation Service will publicly open the sealed bids on March 18. The bids will be accepted in order from the lowest to the highest, after considering a number of factors. But in no case will the total amount of land diverted under the entire program exceed 50 percent of the county's acreage base. Participants will receive their PIK commodity from the same sources as those under the 10-30 percent PIK option.

For a 100-acre corn base, under the 10-30 percent PIK, permitted planting could range from 70 down to 50 acres. The 10 acres under the ARP and the 10 acres of paid diversion are unchanged under the 10-30 percent PIK. However, under the whole base diversion option, the ARP acreage becomes zero.

Participants in the PIK program will be eligible to receive their PIK grain on the PIK availability dates, which approximate local harvest dates. They must assume ownership within 5 months after that.

PARTICIPATION VERSUS NONPARTICIPATION

A corn producer's decision to participate in the 1983 feed grain and PIK programs is complex. Farmers have five choices: (1) not to participate in any part of the program, (2) to participate in the ARP and PLD only, (3) to participate in the ARP, PLD, and the 10-30 percent PIK option, (4) to bid for the whole-base diversion option, and (5) to enroll in the 10-30 percent PIK plus submit a bid for the whole-base diversion option.

The ARP and PLD

A comparison of expected net returns from participation and nonparticipation requires an estimate of the variable costs associated with production, drying, storing, and establishing a cover crop if conserving use acres are to be maintained. Estimates of these costs at various yields are shown in table A. In addition, a producer's expectations of corn yields and prices at harvest and at the loan maturity date are crucial to the decision.

Table A.—Variable costs per acre for producing corn and establishing cover crop in the Midwest at various yields

Expense item	Yield per acre				
	123 bu.	131 bu.	135 bu.	139 bu.	143 bu.
	Dollars				
Planted acres					
Fertilizer[1]	55.0	60.0	62.3	64.2	66.6
Seed	21.0	22.2	22.8	23.4	24.0
Machinery	33.4	34.5	35.0	35.6	36.1
Pesticides[2]	23.4	24.7	25.3	26.0	26.6
Drying					
Fuel & electricity	12.3	13.1	13.6	13.9	14.3
Repairs	3.1	3.2	3.4	3.5	3.6
Total	148.2	157.7	162.4	166.6	171.2
Conservation acres					
Seed	10.0	10.0	10.0	10.0	10.0
Machinery	15.0	15.0	15.0	15.0	15.0
Total	25.0	25.0	25.0	25.0	25.0

[1]Fertilizer costs are based on fertilizer nutrient removal from soil plus extra nitrogen to give planned yields. A charge for limestone maintenance is also included. [2]Pesticide expenses include $9.00 per acre for root worm control. It is assumed that acreage removed from production was planted to corn in 1982; therefore, it is necessary to include this expense to reflect the cost savings when acreage is reduced.

Source: R. A. Hinton, *Farm Management Manual*, Cooperative Extension Service, University of Illinois at Urbana-Champaign, August 1, 1982.

Table B shows an example farm's expected net returns (income above cash expenses) from participation at two price levels, under the following conditions:

- The farm's corn base is 100 acres, with an established yield of 115 bushels an acre.
- The participant diverts 20 acres to conservation uses and plants 80 acres to corn, the maximum permitted.
- The seasonal increase from October to July in prices received is 35 cents per bushel.
- The farm has 10,000 bushels of storage capacity.
- Production in excess of farm storage capacity is sold at harvest (October cash bid).
- Proceeds from harvest sales and CCC loans are deposited at a 10-percent annual interest rate for 9 months.
- Advance program payments (one-half of diversion and deficiency payments) are invested for 16 months at a 10-percent annual rate.
- Crop expenses incur an interest charge for 6 months at a 10-percent annual rate.
- Interest charges on CCC loans are based on 9 months' maturity (October 30 - July 31) at a 10-percent annual rate.

Table B.—Expected net returns for a corn producer participating (P) and not participating (NP) in the 1983 basic feed grains program (apart from PIK)

Item	Price Scenario 1		Price Scenario 2	
	P	NP	P	NP
Program information				
Established yield (bu./a.)	115	—	115	—
Expected yield (bu./a.)	131	123	131	123
Acreage planted	80	100	80	100
Program production (bu.)	9,200	—	9,200	—
Expected production (bu.)	10,480	12,300	10,480	12,300
Expected prices ($/bu.)				
Price at harvest (Oct.)	2.40	2.40	2.60	2.60
Price at loan maturity (July)	2.75	2.75	2.95	2.95
		Dollars		
Expected income				
Grain returns				
Harvest sales	1,152	5,520	1,248	5,980
Loan proceeds	26,500	0	26,500	0
July sales less CCC loans	0	27,500	3,000	29,500
Subtotal	27,652	33,020	30,748	35,480
Payments and interest income				
Deficiency payments	1,932	0	1,932	0
Diversion payments	1,725	0	1,725	0
Interest on October sales[1]	86	414	94	448
Interest on loan proceeds[1]	1,988	0	1,988	0
Interest on advance payments[2]	244	0	244	0
Subtotal	5,975	414	5,983	448
Gross income at loan maturity	33,627	33,434	36,731	35,928
Expected expenses				
Crop expenses				
Corn production	12,616	14,818	12,616	14,818
Storage (repairs and electricity)	500	500	500	500
Cover crop	500	0	500	0
Total crop expenses	13,616	15,318	13,616	15,318
Other cash expenses				
Interest on crop expenses[3]	681	766	681	766
Interest paid on CCC loans[1]	0	0	1,988	0
Total cash expenses	14,297	16,084	16,285	16,084
Income above cash expenses	19,330	17,350	20,446	19,844
Net gain from participation	1,980		602	

[1]Interest computed for 9 months at a 10-percent annual rate. [2]Interest computed for 16 months at a 10-percent annual rate. [3]Interest computed for 6 months at a 10-percent annual rate.

- The participant forfeits corn to CCC at maturity if market prices are below loan rate plus accrued interest. If July prices are above loan rate plus accrued interest, loans are repaid with interest and grain is sold for July cash price.
- The nonparticipant stores up to 10,000 bushels on-farm at harvest and sells in July for the July cash bid. Production in excess of 10,000 bushels is sold at harvest.
- Total production is dried regardless of disposition.
- Average yield for remaining acres on the farm will increase about 3.2 percent for every 10 percent of the acreage base that is idled.[2]

[2]William Lin and Gregory Davenport, "Analysis of Factors Affecting Corn Yields: Projections to 1985," *Feed Outlook and Situation*, FdS-285, ERS, USDA, May 1982, pp. 9-14.

For this example, under price scenario 1 ($2.40 in October and $2.75 in July), net returns from participation are $1,980 higher than those from nonparticipation, or about $20 per acre. Under price scenario 2 ($2.60 in October and $2.95 in July), returns from participation are still $602 higher than from nonparticipation, or about $6 per acre.

The PIK Program

Participants in the 10-30 percent PIK option will receive an amount of corn equal to 80 percent of program yield per PIK acre. Expected net returns can be computed by assuming the participant will value the PIK commodity based on his/her expected corn price when the PIK corn becomes available. Expected net returns are more difficult to quantify under the whole acreage base diversion, because the operator must bid by specifying the percent of the farm program yield he will accept, without a guarantee the bid will be accepted. For the example, we assumed the participant indicated that 75 percent of the

program yield was acceptable. However, since an accepted bid could be lower or higher, the results should be interpreted with caution. Note that an accepted bid of 76 percent of the farm program yield would make net returns of the whole-base diversion option equal those of 30-percent PIK.

The extra incentive provided by the PIK program is stronger under the lower-price scenario ($2.40 in October 1983 and $2.75 in July 1984) than under the higher-price scenario ($2.60 in October and $2.95 in July). For example, net gain from participation (after subtracting expected net returns for nonparticipants from those for participants) in 30-percent PIK increases from $1,416 under price scenario 2 to $2,593 under price scenario 1 (table C). The net gain from PIK participation is the greatest when the participant diverts an additional 30 percent of the acreage base.

What makes the PIK program attractive is the fact that the value of the PIK commodity and the decrease in production expenses more than offset the decrease in grain sales and deficiency payments and the increase in cover crop expenses. In fact, under the whole-base diversion option, the value of the PIK commodity is $339 to $1,280 greater than expected net returns from nonparticipation, depending upon the expected market price. Moreover, cover crop expenses for conservation have the effect of increasing future production capability of the soil—an intangible benefit not counted in this analysis.

Table C.—Expected net returns from participating in the 1983 feed grains program with various PIK options

Item	Price Scenario 1 (Oct.=$2.40, July=$2.75)				Price Scenario 2 (Oct.=$2.60, July=$2.95)			
	Payment-in-kind			Whole base div.	Payment-in-kind			Whole base div.
	10%	20%	30%		10%	20%	30%	
				Acres				
PROGRAM INFORMATION								
Paid land diversion	10	10	10	10	10	10	10	10
PIK	10	20	30	90	10	20	30	90
Planted acreage	70	60	50	0	70	60	50	0
Acreage reduction prog.	10	10	10	0	10	10	10	0
				Bushels				
Program prod.	8,050	6,900	5,750	0	8,050	6,900	5,750	0
Expected yield	135	139	143	—	135	139	143	—
Expected prod.	9,450	8,340	7,150	0	9,450	8,340	7,150	0
				Dollars				
EXPECTED INCOME								
Grain returns								
Harvest sales	0	0	0	0	0	0	0	0
Loan proceeds	25,043	22,101	18,948	0	25,043	22,101	18,948	0
July sales less CCC loans	0	0	0	0	2,835	2,502	2,145	0
Subtotal	25,043	22,101	18,948	0	27,878	24,603	21,093	0
Payment & int. income								
PIK	2,208	4,416	6,624	18,630	2,392	4,784	7,176	20,183
Interest on PIK[1]	166	331	497	1,397	179	359	538	1,514
Def. payments	1,691	1,449	1,208	0	1,691	1,449	1,208	0
Div. payments	1,725	1,725	1,725	1,725	1,725	1,725	1,725	1,725
Int., loan proceeds[1]	1,878	1,658	1,421	0	1,878	1,658	1,421	0
Int., adv. payments[2]	228	212	196	115	228	212	196	115
Subtotal	7,896	9,791	11,671	21,867	8,093	10,187	12,264	23,537
Gross income at loan maturity	32,939	31,892	30,619	21,867	35,971	34,790	33,357	23,537
EXPECTED EXPENSES								
Crop expenses								
Corn production	11,368	9,996	8,560	0	11,368	9,996	8,560	0
Storage (repairs & elec.)	473	417	358	0	473	417	358	0
Cover crop	750	1,000	1,250	2,500	750	1,000	1,250	2,500
Total crop expenses	12,591	11,413	10,168	2,500	12,591	11,413	10,168	2,500
Other cash expenses								
Int. on crop expenses[3]	630	571	508	125	630	571	508	125
Int. on CCC loans[1]	0	0	0	0	1,878	1,658	1,421	0
Total cash expenses	13,221	11,984	10,676	2,625	15,099	13,642	12,097	2,625
EXPECTED NET RETURNS	19,718	19,908	19,943	19,242	20,872	21,148	21,260	20,912
NET GAIN FROM PARTICIPATION	2,368	2,558	2,593	1,892	1,028	1,304	1,416	1,068

[1]Interest computed for 9 months at a 10-percent annual rate. [2]Interest computed for 16 months at a 10-percent annual rate. [3]Interest computed for 6 months at a 10-percent annual rate.

Table D.—Expected net returns for nonparticipants (NP) and participants (P) in the 1983 ARP/PLD and 30-percent PIK programs at various price scenarios

Expected corn price		Av. price received by NP[1]	Expected net returns			Net gain from participation	
Oct. 1983	July 1984		NP	P/ARP-PLD	P/30% PIK	P/ARP-PLD	P/30% PIK
			Dollars				
2.30	2.65	2.58	16,103	19,330	19,646	3,227	3,543
2.40	2.75	2.68	17,350	19,330	19,943	1,980	2,593
2.50	2.85	2.78	18,597	19,394	20,249	797	1,652
2.60	2.95	2.88	19,844	20,446	21,260	602	1,416
2.70	3.05	2.98	21,092	20,578	21,697	−514	605
2.80	3.15	3.08	22,338	20,710	22,134	−1,628	−204

[1]Average price received by nonparticipants is computed by averaging the October and July prices with the weighting factors of .187 and .813, respectively.

DOWN-SIDE RISK PROTECTION

As shown in table D, for participants in the 1983 basic program and the 30-percent PIK, net returns are largely unaffected when prices fall below $2.50 in October 1983 and $2.85 in July 1984. By contrast, returns for nonparticipants decline considerably as prices fall. This is because, for participants, the loan rate serves as the floor price and the 80 percent of farm program yield serves as the floor yield. Conversely, the incentive to participate decreases as the price of corn increases.

Table D compares expected net returns for participants and nonparticipants over a wide range of prices. If the compliance rate is low and yields are normal, a low-price scenario is more likely, in which case participants would enjoy a sizable advantage over nonparticipants. If 50 percent of the acreage is in compliance, medium prices would seem more likely and, for the example situation, participants would still realize a net gain. If signup is large or if yields are low, a higher-price scenario is a possibility. In this case potential net gain from participation declines, possibly to the point where nonparticipation would return a higher net return. But this is known only after the production season, which makes assessment of risk difficult.

THE NET-RETURNS-EQUALIZING PRICE

At some price the expected net returns from not participating will equal the net returns from participating in the 1983 ARP and PLD. This price, which we call the $NREP_1$, may be computed as follows:[3]

$$NREP_1 = \text{average expected price} + \frac{\text{net returns (P) - net returns (NP)}}{\text{exp. prod. (NP) + Program Prod. (P) - exp. prod. (P)}}$$

where P indicates participation and NP nonparticipation. Based on the data in table B for the acreage reduction and paid diversion program, the net returns for participating and not participating would be the same at a weighted average price of $2.94, i.e.

$$NREP_1 = \$2.88 + \frac{\$602}{11{,}020} = \$2.94$$

With the weighting factors for October and July sales being .187 and .813, respectively, and given the assumed price ratio between the 2 months, the NREP implies that a price of $2.65 in October 1983 and $3.01 in July 1984 would equate the net returns from participation in the ARP and PLD with returns from nonparticipation. If farmers anticipate corn prices lower than the equalizing prices, the net return calculations show that it is advantageous to participate in the 1983 ARP and PLD.

Under the PIK program, a corn farmer will find that with an even higher price, the net returns of participation still equal those of nonparticipation. This price, which we call $NREP_2$, may be computed as follows:

$$NREP_2 = \text{average expected price} + \frac{\text{net returns (P) - net returns (NP)}}{\text{exp. prod. (NP) + Program Prod. (P) - exp. prod. (P) - PIK}}$$

where PIK indicates the PIK quantity received by the participant. For example, the equalizing price under the 30-percent PIK is a weighted average price of about $3.05, based on data in table D:

$$NREP_2 = \$2.98 + \frac{\$605}{8{,}140} = \$3.05$$

This NREP, again, implies that a price of about $2.77 in October 1983 and $3.12 in July 1984 would equate the net returns from participation in a 30-percent PIK option with returns from nonparticipation.

CONCLUSION

The incentive to participate in the 1983 program appears to be stronger with the payment-in-kind program. The down-side risk protection, the 50-percent advance payment feature, and current price expectations all suggest that the 1983 ARP/PLD and PIK programs will be more attractive than the 1982 program for most producers. The actual benefits from participating are likely to exceed what is shown in the example, which did not put a value on risk protection, the added FCIC coverage afforded PIK participants, or soil conserving practices.

[3]See Keith Collins and Sam Evans, "Participation Incentives and Supply Effects of the 1982 Rice Acreage Reduction Program," *Rice Outlook and Situation*, RS-39, March 1982, pp. 9-15. This formula remains unchanged, although more complicated features were involved in our analysis than in the one by Collins and Evans.

Regional Feed Grain Surplus and Deficit Balances

by
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ABSTRACT

This article presents regional feed grain balances for the marketing years 1979/80 to 1983/84 by production regions and by specific grains. Supply data incorporate production, beginning stocks, and imports. Use data include exports and all domestic use—feed, food, seed, and industry.

KEYWORDS: Regional feed grain balances, regional feed grain supply and use patterns, feed grain surplus-deficit.

Feed grain supplies for the 10 farm production regions[1] determine disposition patterns from surplus regions to deficit regions. Previous efforts to estimate States' surplus-deficit feed grain positions used a national average feeding rate per grain-consuming animal unit multiplied by the number of animal units from each State. Estimates of feed grains fed by States, less reported feed grain production, classified a particular State as "surplus" or "deficit" in feed grains. Beginning stocks, imports, and in-State other use categories, as well as shipments for exports, were not allowed for in previous classifications.

Farm Production Regions

This article presents estimates of feed grain supply and use by farm production region. From these estimates, an approximate regional surplus or deficit balance can be derived on the basis of supply less total use and ending stocks. Use includes exports as well as domestic use. The latter can be subdivided into FSI (food, seed, and industrial products) and "feed and residual." The largest overall domestic use category is feed and residual, which represents grain fed to livestock and an allowance for waste and shrinkage.

Corn and sorghum regional balances are figured separately for an October-September marketing year. Oats and barley regional balances are based on their common marketing year beginning June 1. Data are presented for the marketing years 1979/80 through 1981/82, plus forecast data for 1982/83. All estimates of regional grain supplies for specific uses were developed from information provided by industry trade sources and various Government agencies.

Practically all the grain-deficit areas have pockets of intense livestock and poultry feeding which capitalize on nearby markets for various animal products or on advantageous nonfeed input markets. The Appalachian, Southeast, and Delta contain major concentrations of contract poultry production. Northeast grain deficits can be attributed to relatively attractive nearby milk, egg, and poultry markets which are somewhat insulated from competing production regions' grain supplies through marketing orders and logistical advantages. A similar situation exists for the Pacific region.

The Southern Plains and Mountain regions contain a large share of the Nation's beef cattle and sheep. Both regions have large feedlots which, in part, intercept young range-produced cattle and lambs that formerly were shipped to grain-surplus regions for finishing. Much of the grain fed in the Southern Plains and Mountain regions is not corn, which helps to reduce corn-use deficits there.

[1]Production regions and States are as follows: Northeast: ME, NH, VT, MA, RI, CT, NY, NJ, PA, DE, MD; Lake States: MI, WI, MN; Corn Belt: OH, IN, IL, IA, MO; Northern Plains: ND, SD, NE, KS; Appalachian: VA, WV, NC, KY, TN; Southeast: SC, GA, FL, AL; Delta States: MS, AR, LA; Southern Plains: OK, TX; Mountain: MT, ID, WY, CO, NM, AZ, UT, NV; Pacific: WA, OR, CA.

REGIONAL CORN BALANCES

The surplus or deficit balance for corn was unchanged for all production regions from 1979/80 through 1982/83. Regional corn surpluses by years were as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Lake States	187.8	383.6	240.8	161.2
Corn Belt	685.5	343.2	471.7	597.2
No. Plains	409.8	436.9	218.2	222.5

Seven of the ten farm production regions were corn-deficit regions from 1979/80 through 1982/83. Regional corn deficits by year were as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	189.0	160.6	105.2	126.9
Appalachian	113.5	122.5	1.6	0.7
Southeast	242.1	279.9	242.0	275.4
Delta	230.3	215.0	206.0	218.5
So. Plains	154.6	125.4	120.5	112.0
Mountain	117.9	88.7	81.7	72.6
Pacific	235.7	171.6	174.9	174.3

Exports

Most corn for export originates in six production regions, including three deficit regions—the Northeast, Appalachian, and Mountain. This situation is mainly due to attractive seasonal export prices for nearby grain needed to top-off ocean freighters. Production regions supplying export grain (including a small amount of corn grain by products—probably about 1 percent or less) are estimated as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	6.4	6.2	5.0	5.4
Lake States	252.4	244.4	204.3	212.9
Corn Belt	1,883.0	1,836.6	1,533.9	1,598.6
No. Plains	209.6	203.0	169.6	176.7
Appalachian	64.1	50.0	41.7	43.6
Mountain	17.1	15.0	12.5	13.0
Total	2,432.6	2,355.2	1,967.0	2,050.0

Regional Domestic Use (FSI)

Corn use in the FSI category by production regions is centered in heavy corn-producing areas. Nevertheless, some limited quantities of corn are used for seed and food in every production region. Seed use is derived from reported acres planted and seeding rates. Strictly industrial use is confined to the Corn Belt, Lake States, and Northern Plains. Food use includes breakfast food manufacturers and, in many Southern and Southwestern States, ethnic foods. Production of alcoholic beverages is confined to those regions that historically have inherited processing skills and whose beverages have gained consumer acceptance. This is particularly the case for beverages with unlimited shelf life.

Regional Feed Use

The quantity of corn fed relative to total feed grains in a production region reflects the kind of livestock fed and nearby grain supplies. Total corn fed in each region is as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	391.5	358.6	360.8	368.6
Lake States	615.9	564.2	568.9	583.6
Corn Belt	1,402.8	1,284.8	1,300.0	1,341.2
No. Plains	449.5	411.7	415.0	430.0
Appalachian	376.2	344.6	346.4	358.3
Southeast	416.7	381.7	383.5	399.3
Delta	239.8	219.6	220.3	225.2
So. Plains	219.2	200.8	202.3	204.8
Mountain	192.4	176.2	177.4	184.3
Pacific	214.9	196.5	198.4	204.7
U.S.	4,518.9	4,138.5	4,173.0	4,300.0

REGIONAL SORGHUM GRAIN BALANCES

Domestic feed use and exports make up approximately 98 percent of total sorghum utilization. Less than 2 percent of total sorghum use is for food, seed, and industrial use. The Southern Plains supplies about three-quarters of all U.S. sorghum exports.

The volume of cattle on feed is the major factor in total sorghum feed use in sorghum-surplus regions. While feed use is generally confined to heavy sorghum-producing regions, corn-deficit regions that are fairly close to sorghum-surplus regions will substitute sorghum for corn when delivered prices favor the former. This price differential is frequently seasonal.

Regional Surpluses

Sorghum supply and use in the Northeast and Lake States are practically nonexistent. For 1979/80 and 1980/81, the Northern Plains was the only production region showing a sorghum surplus. By 1981/82 the Delta region increased supplies sufficiently to show a slight surplus, and preliminary data for 1982/83 indicate the Delta sorghum surplus will more than double.

Regional Deficits

A sorghum deficit in a production region such as the Corn Belt, which is the major corn-surplus region, would seem surprising. However, Corn Belt States adjacent to Nebraska and Kansas apparently find additional supplies from these States helpful in supplementing local feed sorghum supplies, because the supplements free locally produced corn for market or other uses.Other production regions use sorghum in lieu of corn when delivered prices favor sorghum. The following lists regional sorghum deficits:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Corn Belt	35.1	18.2	3.7	*
Appalachian	13.7	6.9	8.3	4.1
Southeast	18.2	10.0	11.9	6.1
Delta	12.2	10.7	*	*
So. Plains	66.2	91.7	41.0	17.0
Mountain	40.3	20.2	36.9	28.3
Pacific	71.5	37.9	61.0	44.0
Total	257.2	195.6	162.8	99.5

* = Surplus

Exports

Sorghum grain supplies for export come from four production regions; estimates for each are as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Corn Belt	32.5	29.9	24.9	24.4
No. Plains	40.6	37.3	31.1	30.6
Delta	8.1	7.4	6.2	6.1
So. Plains	234.7	224.1	186.8	183.9
Total	324.9	298.7	249.0	245.0

Regional Feed Use

Sorghum feeding is relatively small compared with corn, even in the Northern and Southern Plains. However, there are locales where sorghum is a major feed input, particularly for cattle. Regional sorghum feed use is as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	0.5	0.3	—	—
Corn Belt	65.9	41.8	58.7	45.7
No. Plains	119.9	76.0	106.7	83.0
Appalachian	20.5	13.0	18.4	14.3
Southeast	21.4	13.6	19.1	14.8
Delta	16.5	10.5	14.7	11.4
So. Plains	93.1	58.7	82.6	64.3
Mountain	66.5	42.4	59.5	46.2
Pacific	80.1	50.8	73.0	55.5
Total	484.4	307.1	431.0	335.2

REGIONAL BARLEY GRAIN BALANCES

Barley is unique as a feed grain because about 40 percent of total use is for nonfeed purposes. Aside from feeding, the major use is malt production for the brewing industry and for food. Another 15 to 20 percent is exported. Feed use claims around 43 percent and frequently shows wide seasonal fluctuations. One reason barley feed use shifts is that new-crop supplies are available a few months prior to new-crop corn and sorghum.

Regional Surpluses

Three farm production regions—the Northern Plains, Mountain, and Pacific—are consistently barley-surplus regions. The Mountain region, which can claim over one-third of total barley production, usually has over 50 percent of total surplus barley. Regional surplus barley (marketing years beginning June 1) is as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
No. Plains	67.1	45.9	58.4	43.5
Mountain	114.9	102.3	112.1	149.6
Pacific	27.2	35.2	32.3	42.2
Total	209.2	183.4	202.8	235.3

Regional Deficits

Seven farm production regions have barley deficits. Two, the Corn Belt and Delta, report practically no production, yet both FSI and feed use are significant in these regions. Nonfeed use is roughly one-third of total use in these two deficits regions. In the heavily populated Northeast, about three-forths of total use is for nonfeed. The following summarizes barley grain deficits:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	55.4	55.0	56.0	58.2
Lake States	30.8	10.3	11.7	46.7
Corn Belt	70.6	68.9	77.7	70.1
Appalachian	12.4	12.9	16.6	14.0
Southeast	14.1	11.8	13.7	15.0
Delta	9.9	9.1	10.0	11.0
So. Plains	16.0	15.4	17.1	20.3
Total	209.2	183.4	202.8	235.3

Exports

Regions that supply barley for export include the Lake States, Appalachia (both net deficit regions), the Northern Plains, Mountain, and Pacific. These estimates are based on non-Government trade sources and Department of Commerce information regarding exports by geographic regions. The following summarizes barley export sources:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Lake States	5.5	7.7	10.0	4.5
No. Plains	13.7	19.2	25.1	11.3
Appalachian	5.5	7.7	10.0	4.5
Mountain	16.4	22.9	30.0	13.5
Pacific	13.7	19.2	25.0	11.2
Total	54.8	76.7	100.1	45.0

Regional FSI Use

Regional use of barley for food and beverage production reflects location of the major processing centers. Regional estimates are based on processing facilities and industry estimates of barley use by such centers. Seed use is based on seeding rates and acres planted. The following lists barley use for food, seed, and industry:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	53.3	54.4	54.0	55.0
Lake States	34.4	35.1	34.8	35.3
Corn Belt	28.4	29.0	28.8	29.2
No. Plains	6.4	6.5	6.5	6.6
Appalachian	6.8	6.9	6.9	7.0
Southeast	3.5	3.6	3.5	3.6
Delta	3.6	3.7	3.6	3.7
So. Plains	4.9	5.0	5.0	5.1
Mountain	9.6	9.8	9.7	9.9
Pacific	21.0	21.5	21.3	21.6
Total	171.9	175.5	174.1	177.0

The relative uniformity of individual regions' FSI use over time reflects fairly static barley use by the food and beverage industry.

Regional Feed Use

Feed use of barley has averaged slightly more than 200 million bushels from 1979/80 through 1982/83. Feed use during 1980/81 was the smallest of the four seasons because supplies were small. Barley use for feed and residual has been as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	16.5	14.1	16.3	18.6
Lake States	31.5	26.9	31.2	35.6
Corn Belt	50.9	43.3	50.3	42.4
No. Plains	27.3	23.3	27.1	31.0
Appalachian	10.9	9.3	10.8	12.3
Southeast	11.6	9.9	11.4	13.0
Delta	6.7	5.7	6.6	7.5
So. Plains	16.2	13.8	16.0	18.3
Mountain	15.8	13.5	15.6	17.8
Pacific	16.4	14.0	16.1	18.5
Total	203.8	173.8	201.4	215.0

REGIONAL OAT GRAIN BALANCES

Livestock feeding accounts for about 85 percent of total oat use. Less than 2 percent is exported and the remaining 12-15 percent is used for seed and breakfast foods. Today's oat crops are superior to crops of 30 years ago, averaging 38 or more pounds per bushel. A 600-million-bushel crop 30 years ago would equal the feed value of a 500-million-bushel crop in 1980. Oat demand is less price responsive than demand for corn or sorghum, partly because dairy farmers and horse owners prefer to feed oats. Most oat-deficit regions have large horse and milk cow numbers but relatively modest oat production.

Regional Surpluses

The Lake States and Northern Plains and, to a lesser extent, the Corn Belt are surplus oat production regions. The Lake States are the largest suppliers of oats for Eastern deficit areas such as the Northeast and Appalachia regions. Rolled and crimped oats are used in large quantities for dairy feed formulations in these areas. Heavy recleaned oats from the Lake States are fed in significant quantities to horses in the East and South. The following summarizes regional surplus oat supplies for marketing years beginning June 1:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Lake States	63.1	68.7	70.5	46.2
Corn Belt	4.9	13.4	7.4	*
No. Plains	104.2	76.2	79.1	118.9
Total	172.2	152.3	157.0	165.1

* = Deficit.

Regional Deficits

Oats are fed in fairly large quantities in all regions regardless of limited local supplies. Dairy and horse consumption account for this nationwide demand, which has kept prices historically well above oats' relative feeding values. The following summary of annual oat deficit levels by production regions illustrates feed oats' preferred status.

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	36.7	29.9	33.7	31.5
Corn Belt	*	*	*	15.8
Appalachian	18.9	17.3	17.5	17.5
Southeast	39.5	36.3	35.6	33.2
Delta	28.9	25.3	26.4	25.5
So. Plains	12.2	10.6	7.6	12.5
Mountain	11.0	14.3	13.1	7.1
Pacific	25.0	20.6	23.1	21.9
Total	172.3	152.3	157.0	165.0

* = Surplus.

Total Oats Use by Regions

Since exports and FSI use are relatively insignificant, only total use of oats is estimated on a regional basis, as follows:

Region	1979/80	1980/81	1981/82	1982/83
		Million bushels		
Northeast	79.0	69.7	75.9	74.1
Lake States	118.5	111.3	111.9	108.2
Corn Belt	104.9	93.6	97.1	94.6
No. Plains	65.9	64.3	64.8	62.3
Appalachian	27.2	24.0	24.7	24.2
Southeast	49.1	43.2	44.5	43.5
Delta	31.3	27.5	28.4	27.8
So. Plains	32.2	28.5	29.5	28.8
Mountain	27.4	25.7	25.6	24.9
Pacific	35.6	31.3	32.5	31.8
U.S.	571.1	519.1	534.9	520.2

Table 1.--Feed grains: marketing year supply, disappearance, area, and prices, 1978-82 1/

Year 2/	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 3/	Total
	Million metric tons													
1978/79	41.4	221.5	0.3	263.2	14.4	5.1	1.4	135.9	156.8	60.2	217.0	3.7	42.5	46.2
1979/80	46.2	238.2	0.3	284.7	15.7	5.2	1.4	138.7	161.0	71.3	232.3	7.7	44.7	52.4
1980/81	52.4	198.0	0.3	250.7	17.1	5.4	1.3	123.0	146.8	69.3	216.1	7.1	27.5	34.6
1981/82 4/	34.6	248.5	0.3	283.4	18.9	5.5	1.4	127.9	153.7	58.6	212.3	8.9	62.2	71.1
1982/83*	71.1	255.0	0.3	326.4	- - -	28.1 (± 1)	- - -	128.8 (± 9)	156.9 (± 9)	59.4 (± 6)	216.3 (± 13)			110.1 (± 13)

Year 2/	Area				Yield per harvested hectare	Index	Government support program
	National program	Set-aside and diverted	Planted	Harvested for grain		Average price received by farmers 5/	Total payments to participants
	Million hectares				Metric tons	1977=100	Million dollars
1978/79	39.4	3.4	50.3	42.7	5.19	113	6/ 1,023
1979/80	44.3	1.9	48.1	41.5	5.74	125	6/ 247
1980/81	42.7	---	49.1	41.1	4.82	154	7/ 412
1981/82 4/	42.5	---	50.0	43.3	5.74	123	8/ 423
1982/83	---	1.3	49.3	43.3	5.89		8/ 415

1/ Aggregated data on corn, sorghum, barley, and oats. 2/ The marketing year for corn and sorghum begins October 1; for oats and barley June 1. 3/ Includes total Government loans (original and reseal). 4/ Estimated. 5/ Excludes support payments. 6/ Deficiency, disaster, and diversion payments. 7/ Disaster payments. 8/ Deficiency and disaster payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 2.--Corn: marketing year supply and disappearance, area, and prices, 1978-82

Year beginning October 1	Supply: Beginning stocks	Supply: Production	Supply: Imports	Supply: Total	Disappearance: Domestic use: Food	Alc. beverages 1/	Seed	Feed and residual	Total	Exports	Total disappearance	Ending stocks Sept. 30: Govt. owned	Privately owned 2/	Total
	Million bushels													
1978/79	1,111.4	7,267.9	1.2	8,380.5	531.2	70.0	19.5	4,322.8	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81	1,617.5	6,644.8	1.2	8,263.5	641.8	73.6	20.2	4,138.7	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82 3/	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,172.5	4,984.0	1,966.9	6,950.9	302.4	1,983.5	2,285.9
1982/83*	2,285.9	8,397.3	1.0	10,684.2	---	900.0 (± 25)	---	4,300.2 (± 300)	5,200.2 (± 300)	2,050.0 (± 200)	7,250.2 (± 400)			3,434.0 (± 400)

Year beginning October 1	Area: National program	Area: Set-aside and diverted	Area: Planted	Area: Harvested for grain	Yield per harvested acre	Average prices: Received by farmers 4/	St. Louis No. 2 Yellow	Omaha No. 2. Yellow	Gulf Ports No. 2 Yellow	Government support program: National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	76.2	6.1	81.7	71.9	101.0	2.25	2.51	2.28	2.81	2.00	2.10	6/ 683
1979/80	85.7	2.9	81.4	72.4	109.7	2.52	2.73	2.49	3.02	2.10	2.20	7/ 126
1980/81	84.1	---	84.0	73.0	91.0	3.11	3.35	3.13	3.54	2.25	2.35	8/ 280
1981/82 3/	80.5	---	84.2	74.7	109.8	2.50	2.61	2.46	2.83	2.40	2.40	8/ 92
1982/83	---	2.1	81.9	73.2	114.8	2.30-2.50	5/ 2.44	5/ 2.32	5/ 2.58	2.55	2.70	9/ 289

1/ Malt beverage and distilled liquor products converted to a corn basis. 2/ Includes quantity under loan and farmer-owned reserve. 3/ Estimated. 4/ Excludes support payments. 5/ October 1982 thur January 1983 average. 6/ Deficiency, disaster, and diversion payments. 7/ Disaster and diversion payments. 8/ Disaster payments. 9/ Deficiency and disaster payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 3.--Sorghum: marketing year supply and disappearance, area, and prices, 1978-82

Year beginning October 1	Supply				Disappearance							Ending stocks Sept. 30		
	Beginning stocks	Production	Imports	Total	Domestic use: Food	Domestic use: Alc. beverages	Domestic use: Seed	Domestic use: Feed and residual	Domestic use: Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	190.5	731.3	---	921.8	6.0	4.1	1.8	543.8	555.7	206.6	762.3	43.6	115.9	159.5
1979/80	159.5	808.9	---	968.4	6.0	4.6	2.0	484.4	497.0	324.9	821.9	43.9	102.6	146.5
1980/81	146.5	579.2	---	725.7	5.0	4.3	2.0	307.1	318.4	298.7	617.1	38.2	70.4	108.6
1981/82 2/	108.6	879.2	---	987.8	4.3	4.8	2.0	431.0	442.1	249.1	691.2	42.9	253.7	296.6
1982/83*	296.6	841.1	---	1,137.7	---	---	11.0	---	334.7 (± 35)	345.7 (± 35)	245.0 (± 35)	590.7 (± 55)		547.0 (± 55)

Year beginning October 1	Area				Yield per harvested acre	Average prices				Government support program		
	National program	Set-aside and diverted	Planted	Harvested for grain		Received by farmers 3/	Kansas City: No. 2 Yellow	Texas: No. 2 Yellow	Gulf Ports: No. 2 Yellow	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels		Dollars per cwt.					Mil. dol.
1978/79	13.7	1.4	16.2	13.4	54.5	3.59	4.00	4.40	4.65	3.39	4.07	5/ 243
1979/80	15.9	1.2	15.3	12.9	62.7	4.18	4.65	4.97	5.54	3.57	4.18	5/ 99
1980/81	12.8	---	15.6	12.5	46.3	5.25	5.36	5.86	6.16	3.82	4.46	6/ 101
1981/82 2/	14.3	---	16.0	13.7	64.1	4.27	4.29	4.85	4.97	4.07	4.55	7/ 268
1982/83	---	0.7	16.1	14.2	59.0	4.20-4.46	4/ 4.25	4/ 4.48	4/ 4.92	4.32	4.64	7/ 66

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Excludes support payments. 4/ October 1982 thru January 1983 average. 5/ Deficiency, disaster, and diversion payments. 6/ Disaster payments. 7/ Deficiency and disaster payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 4.--Barley: marketing year supply and disappearance, area, and prices, 1978-82

Year beginning June 1	Supply				Disappearance							Ending stocks May 31		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	173.1	454.8	10.5	638.4	6.0	147.6	13.6	217.5	384.7	25.7	410.4	2.5	225.5	228.0
1979/80	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	430.5	3.2	188.9	192.1
1980/81	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82 2/	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	476.5	3.3	146.4	149.7
1982/83*	149.7	522.4	10.0	682.1	---	177.0 (± 5)	---	215.1 (± 20)	392.1 (± 20)	45.0 (± 10)	437.1 (± 25)			245.0 (± 25)

	Area				Yield	Average prices				Government support program		
							Minneapolis	Portland				
	National program	Set-aside and diverted	Planted	Harvested for grain	per harvested acre	Received by farmers 3/	No. 2 or better, feed	No. 3 or better, malting	No. 2	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	7.5	0.8	10.0	9.2	49.2	1.92	1.80	2.38	2.10	1.63	2.25	5/ 97
1979/80	7.8	0.7	8.1	7.5	50.9	2.29	2.16	2.87	2.69	1.71	2.40	6/ 22
1980/81	8.7	---	8.3	7.3	49.6	2.86	2.60	3.64	3.34	1.83	2.55	7/ 31
1981/82 2/	10.2	---	9.7	9.2	52.3	2.45	2.21	3.06	2.87	1.95	2.60	6/ 63
1982/83	---	0.4	9.6	9.1	57.3	2.05-2.15	4/ 1.72	4/ 2.50	4/ 2.44	2.08	2.60	8/ 60

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Excludes support payments. 4/ June 1982 thru January 1983 average. 5/ Deficiency, disaster, and diversion payments. 6/ Deficiency and disaster payments. 7/ Disaster payments. 8/ Deficiency payments. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 5.--Oats: marketing year supply and disappearance, area, and prices, 1978-82

Year beginning June 1	Supply				Disappearance							Ending stocks May 31		
	Beginning stocks	Production	Imports	Total	Domestic use: Food	Domestic use: Alc. beverages	Domestic use: Seed	Domestic use: Feed and residual	Domestic use: Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.5	174.4	176.9
1981/82 2/	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7	0.7	151.3	152.0
1982/83*	152.0	617.0	1.0	770.0	---	75.0	---	440.0 (± 25)	515.0 (± 25)	5.0 (± 2)	520.0 (± 25)			250.0 (± 25)

	Area				Yield per harvested acre	Average prices				Government support program		
	National program	Set-aside and diverted 3/	Planted	Harvested for grain		Received by farmers 4/	Minneapolis: No. 2 white, heavy	Portland: No. 2 white, heavy	Toledo: No. 2 5/	National average loan rate	Target price	Total payments to participants
	Million acres				Bushels	Dollars per bushel						Mil. dol.
1978/79	---	---	16.4	11.1	52.3	1.20	1.43	1.79	1.37	1.03	---	---
1979/80	---	---	14.0	9.7	54.4	1.36	1.57	1.87	1.60	1.08	---	---
1980/81	---	---	13.4	8.7	53.0	1.79	2.04	2.42	2.17	1.16	---	---
1981/82 2/	---	---	13.7	9.4	54.1	1.89	2.14	2.36	2.23	1.24	---	---
1982/83	---	0.1	14.2	10.6	58.4	1.40-1.55	6/ 1.69	6/ 2.18	6/ 1.57	1.31	1.50	---

1/ Includes quantity under loan and farmer-owned reserve. 2/ Estimated. 3/ Not included in the program until 1982. 4/ Excludes support payments. 5/ Prior to June 1981 reported for Chicago. 6/ June 1982 thru January 1983 average. *The probability is 2 out of 3 that the final outcome will be within this range.

Table 6.--Feed grains: feed year supply and disappearance, specified periods, 1978-82
(corn, sorghum, oats, barley)

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million metric tons													
1978/79														
Oct.-Dec.	52.7	203.2	0.1	256.0	3.6	1.2	0.1	45.1	50.0	12.9	62.9	3.0	190.1	193.1
Jan.-Mar.	193.1	---	0.1	193.2	3.2	1.2	0.3	39.0	43.7	12.6	56.3	3.7	133.2	136.9
Apr.-May	136.9	---	0.1	137.0	2.4	0.9	0.8	21.6	25.7	10.6	36.3	3.7	97.0	100.7
June-Sept.	100.7	16.0	0.1	116.8	5.2	1.7	0.2	30.4	37.5	23.8	61.3	3.7	51.8	55.5
Mkt. year	52.7	219.2	0.4	272.3	14.4	5.0	1.4	136.1	156.9	59.9	216.8	3.7	51.8	55.5
1979/80														
Oct.-Dec.	55.5	222.2	0.1	277.8	3.5	1.2	0.1	47.6	52.4	19.2	71.6	3.8	202.4	206.2
Jan.-Mar.	206.2	---	0.1	206.3	3.2	1.3	0.3	39.6	44.4	17.8	62.2	3.8	140.3	144.1
Apr.-May	144.1	---	2/	144.1	2.5	1.0	0.8	20.3	24.6	11.6	36.2	5.9	102.0	107.9
June-Sept.	107.9	14.5	0.1	122.5	6.5	1.9	0.2	30.4	39.0	23.1	62.1	7.7	52.7	60.4
Mkt. year	55.5	236.7	0.3	292.5	15.7	5.4	1.4	137.9	160.4	71.7	232.1	7.7	52.7	60.4
1980/81														
Oct.-Dec.	60.4	183.4	0.1	243.9	3.7	1.2	0.1	45.5	50.5	20.5	71.0	7.7	165.2	172.9
Jan.-Mar.	172.9	---	0.1	173.0	3.2	1.3	0.3	32.1	36.9	18.7	55.6	7.6	109.8	117.4
Apr.-May	117.4	---	2/	117.4	2.8	1.0	0.8	20.8	25.4	11.3	36.7	7.6	73.1	80.7
June-Sept.	80.7	17.8	0.1	98.6	7.5	1.8	0.2	24.8	34.3	18.8	53.1	7.1	38.4	45.5
Mkt. year	60.4	201.2	0.3	261.9	17.2	5.3	1.4	123.2	147.1	69.3	216.4	7.1	38.4	45.5
1981/82														
Oct.-Dec.	45.5	230.7	0.1	276.3	4.1	1.1	0.1	47.4	52.7	16.6	69.3	7.4	199.6	207.0
Jan.-Mar.	207.0	---	0.1	207.1	3.5	1.4	0.3	36.6	41.8	14.8	56.6	7.7	142.8	150.5
Apr.-May	150.5	---	0.1	150.6	3.1	1.0	0.9	20.1	25.1	11.2	36.3	8.0	106.3	114.3
June-Sept.	114.3	20.3	0.1	134.7	8.2	1.9	0.2	23.7	34.0	15.8	49.8	8.9	76.0	84.9
Mkt. year	45.5	251.0	0.4	296.9	18.9	5.4	1.5	127.8	153.6	58.4	212.0	8.9	76.0	84.9
1982/83														
Oct.-Dec	84.9	234.7	0.1	319.7	4.7	1.1	0.1	48.8	54.7	14.9	69.6	12.2	237.9	250.1
Jan.-Mar.														
Apr.-May														
June-Sept.														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 metric tons.

Table 7.--Corn: marketing year supply and disappearance, specified periods, 1978-82

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages 1/	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 2/	Total
	Million bushels													
1978/79														
Oct.-Dec	1,111.4	7,267.9	0.1	8,379.4	132.8	17.1	---	1,456.4	1,606.3	454.0	2,060.3	77.3	6,241.8	6,319.1
Jan.-Mar.	6,319.1	---	0.4	6,319.5	116.9	16.9	3.9	1,255.1	1,392.8	426.3	1,819.1	98.8	4,401.6	4,500.4
Apr.-May	4,500.4	---	0.2	4,500.6	90.3	13.2	11.7	711.0	826.2	387.2	1,213.4	100.6	3,186.6	3,287.2
June-Sept.	3,287.2	---	0.5	3,287.7	191.2	22.8	3.9	900.3	1,118.2	865.6	1,983.8	99.7	1,204.2	1,303.9
Mkt. year	1,111.4	7,267.9	1.2	8,380.5	531.2	70.0	19.5	4,322.8	4,943.5	2,133.1	7,076.6	99.7	1,204.2	1,303.9
1979/80														
Oct.-Dec.	1,303.9	7,938.8	0.3	9,243.0	128.2	16.3	---	1,549.4	1,693.9	662.9	2,356.8	99.7	6,786.5	6,886.2
Jan.-Mar.	6,886.2	---	0.3	6,886.5	116.6	18.4	4.0	1,308.2	1,447.2	582.0	2,029.2	101.2	4,756.1	4,857.3
Apr.-May	4,857.3	---	0.1	4,857.4	93.2	13.9	12.0	682.3	801.4	385.6	1,187.0	180.5	3,489.9	3,670.4
June-Sept.	3,670.4	---	0.4	3,670.8	244.8	23.7	4.0	978.7	1,251.2	802.1	2,053.3	256.3	1,361.2	1,617.5
Mkt. year	1,303.9	7,938.8	1.1	9,243.8	582.8	72.3	20.0	4,518.6	5,193.7	2,432.6	7,626.3	256.3	1,361.2	1,617.5
1980/81														
Oct.-Dec.	1,617.5	6,644.8	0.2	8,262.5	136.3	16.6	---	1,523.0	1,675.9	727.8	2,403.7	254.3	5,604.5	5,858.8
Jan.-Mar.	5,858.8	---	0.3	5,859.1	116.3	18.6	4.0	1,100.1	1,239.0	632.9	1,871.9	250.0	3,737.2	3,987.2
Apr.-May	3,987.2	---	0.1	3,987.3	106.7	13.8	12.2	684.7	817.4	395.7	1,213.1	251.6	2,522.6	2,774.2
June-Sept.	2,774.2	---	0.6	2,774.8	282.5	24.6	4.0	830.9	1,142.0	598.8	1,740.8	237.8	796.2	1,034.0
Mkt. year	1,617.5	6,644.8	1.2	8,263.5	641.8	73.6	20.2	4,138.7	4,874.3	2,355.2	7,229.5	237.8	796.2	1,034.0
1981/82														
Oct.-Dec.	1,034.0	8,201.6	0.4	9,236.0	153.2	16.8	---	1,552.8	1,722.8	545.5	2,268.3	247.6	6,720.1	6,967.7
Jan.-Mar.	6,967.7	---	0.3	6,968.0	128.4	20.2	3.9	1,194.3	1,346.8	489.4	1,836.2	261.7	4,870.1	5,131.8
Apr.-May	5,131.8	---	0.1	5,131.9	119.4	15.2	12.1	672.1	818.8	409.0	1,227.8	269.7	3,634.4	3,904.1
June-Sept.	3,904.1	---	0.4	3,904.5	308.4	30.5	3.4	753.3	1,095.6	523.0	1,618.6	302.4	1,983.5	2,285.9
Mkt. year	1,034.0	8,201.6	1.2	9,236.8	709.4	82.7	19.4	4,172.5	4,984.0	1,966.9	6,950.9	302.4	1,983.5	2,285.9
1982/83														
Oct.-Dec.	2,285.9	8,397.3	0.3	10,683.5	175.2	16.5	---	1,556.4	1,748.1	512.7	2,260.8	429.0	7,993.7	8,422.7
Jan.-Mar.														
Apr.-May														
June-Sept.														
Mkt. year														

1/ Malt beverage and distilled liquor grain products converted to a corn basis. 2/ Includes quantity under loan and farmer-owned reserve.

Table 8.--Sorghum: marketing year supply and disappearance, specified periods, 1978-82

Year and periods beginning October 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79														
Oct.-Dec.	190.5	731.3	---	921.8	1.4	1.1	---	235.7	238.2	46.6	284.8	36.6	600.4	637.0
Jan.-Mar.	637.0	---	---	637.0	1.6	1.0	0.2	148.6	151.4	68.3	219.7	42.4	374.9	417.3
Apr.-May	417.3	---	---	417.3	1.3	0.7	1.1	64.0	67.1	28.0	95.1	42.8	279.4	322.2
June-Sept.	322.2	---	2/	322.2	1.7	1.3	0.5	95.5	99.0	63.7	162.7	43.6	115.9	159.5
Mkt. year	190.5	731.3	2/	921.8	6.0	4.1	1.8	543.8	555.7	206.6	762.3	43.6	115.9	159.5
1979/80														
Oct.-Dec.	159.5	808.9	---	968.4	1.6	1.3	---	243.6	246.5	74.2	320.7	45.3	602.4	647.7
Jan.-Mar.	647.7	---	---	647.7	1.6	1.2	0.2	140.2	143.2	108.5	251.7	45.6	350.4	396.0
Apr.-May	396.0	---	---	396.0	1.4	0.7	1.2	54.5	57.8	60.3	118.1	45.6	232.3	277.9
June-Sept.	277.9	---	2/	277.9	1.4	1.4	0.6	46.1	49.5	81.9	131.4	43.9	102.6	146.5
Mkt. year	159.5	808.9	2/	968.4	6.0	4.6	2.0	484.4	497.0	324.9	821.9	43.9	102.6	146.5
1980/81														
Oct.-Dec.	146.5	579.2	2/	725.7	1.6	1.2	---	198.2	201.0	60.3	261.3	43.7	420.7	464.4
Jan.-Mar.	464.4	---	2/	464.4	1.6	0.9	0.2	63.8	66.5	84.1	150.6	43.5	270.3	313.8
Apr.-May	313.8	---	2/	313.8	0.8	0.7	1.2	84.8	87.5	41.7	129.2	43.8	140.7	184.6
June-Sept.	184.6	---	2/	184.6	1.0	1.5	0.6	-39.7	-36.6	112.6	76.0	38.2	70.4	108.6
Mkt. year	146.5	579.2	2/	725.7	5.0	4.3	2.0	307.1	318.4	298.7	617.1	38.2	70.4	108.6
1981/82														
Oct.-Dec.	108.6	879.2	2/	987.8	1.3	1.3	---	217.9	220.5	77.8	298.3	38.4	651.1	689.5
Jan.-Mar.	689.5	---	2/	689.5	1.3	1.3	0.2	150.5	153.3	74.3	227.6	38.2	423.7	461.9
Apr.-May	461.9	---	2/	461.9	0.5	0.8	1.2	57.8	60.3	21.8	82.1	40.3	339.5	379.8
June-Sept.	379.8	---	2/	379.8	1.2	1.4	0.6	4.8	8.0	75.2	83.2	42.9	253.7	296.6
Mkt. year	108.6	879.2	2/	987.8	4.3	4.8	2.0	431.0	442.1	249.1	691.2	42.9	253.7	296.6
1982/83														
Oct.-Dec	296.6	841.1	2/	1,137.7	1.4	0.9	---	275.8	278.1	67.0	345.1	46.7	745.9	792.6
Jan.-Mar.														
Apr.-May														
June-Sept.														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve. 2/ Less than 50,000 bushels.

Table 9.--Barley: marketing year supply and disappearance, specified periods, 1978-82

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use								Privately:	
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	owned 1/	Total
	Million bushels													
1978/79														
June-Sept.	173.1	454.8	2.7	630.6	2.3	52.5	1.1	83.8	139.7	18.8	158.5	0.8	471.3	472.1
Oct.-Dec.	472.1	---	2.8	474.9	1.4	33.0	1.9	42.7	79.0	4.7	83.7	1.4	389.8	391.2
Jan.-Mar.	391.2	---	3.0	394.2	1.4	35.5	3.3	56.8	97.0	0.8	97.8	2.3	294.1	296.4
Apr.-May	296.4	---	2.0	298.4	0.9	26.6	7.3	34.2	69.0	1.4	70.4	2.5	225.5	228.0
Mkt. year	173.1	454.8	10.5	638.4	6.0	147.6	13.6	217.5	384.7	25.7	410.4	2.5	225.5	228.0
1979/80														
June-Sept.	228.0	382.8	3.7	614.5	2.5	51.9	1.1	87.3	142.8	9.9	152.7	2.9	458.9	461.8
Oct.-Dec.	461.8	---	2.8	464.6	1.7	34.0	2.0	38.9	76.6	22.4	99.0	3.1	362.5	365.6
Jan.-Mar.	365.6	---	3.2	368.8	1.7	37.0	3.4	53.3	95.4	11.1	106.5	3.3	259.0	262.3
Apr.-May	262.3	---	2.1	264.4	1.1	28.0	7.5	24.3	60.9	11.4	72.3	3.2	188.9	192.1
Mkt. year	228.0	382.8	11.8	622.6	7.0	150.9	14.0	203.8	375.7	54.8	430.5	3.2	188.9	192.1
1980/81														
June-Sept.	192.1	361.0	3.5	556.6	2.5	56.6	1.2	78.9	139.2	24.9	164.1	3.5	389.0	392.5
Oct.-Dec.	392.5	---	2.3	394.8	1.7	33.9	2.2	32.2	70.0	21.4	91.4	3.5	299.9	303.4
Jan.-Mar.	303.4	---	2.7	306.1	1.7	36.0	3.7	38.6	80.0	22.7	102.7	3.4	200.0	203.4
Apr.-May	203.4	---	1.7	205.1	1.1	28.8	6.1	24.1	60.1	7.7	67.8	3.4	133.9	137.3
Mkt. year	192.1	361.0	10.2	563.3	7.0	155.3	13.2	173.8	349.3	76.7	426.0	3.4	133.9	137.3
1981/82														
June-Sept.	137.3	479.3	2.4	619.0	2.5	54.5	1.3	76.5	134.8	32.6	167.4	3.3	448.3	451.6
Oct.-Dec.	451.6	---	2.4	454.0	1.7	32.1	2.3	51.8	87.9	33.0	120.9	3.3	329.8	333.1
Jan.-Mar.	333.1	---	2.7	335.8	1.7	37.2	4.0	42.9	85.8	23.1	108.9	3.3	223.6	226.9
Apr.-May	226.9	---	2.1	229.0	1.0	27.1	8.7	31.1	67.6	11.4	79.3	3.3	146.4	149.7
Mkt. year	137.3	479.3	9.6	626.2	6.9	150.9	16.3	202.3	376.4	100.1	476.5	3.3	146.4	149.7
1982/83														
June-Sept.	149.7	522.4	5.1	677.2	2.5	50.9	1.3	95.7	150.4	25.4	175.8	3.9	497.5	501.4
Oct.-Dec.	501.4	---	1.9	503.3	1.8	30.0	2.8	43.6	78.2	6.4	84.6	4.8	413.9	418.7
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve.

Table 10.--Oats: marketing year supply and disappearance, specified periods, 1978-82

Year and periods beginning June 1	Supply				Disappearance							Ending stocks		
					Domestic use									
	Beginning stocks	Production	Imports	Total	Food	Alc. beverages	Seed	Feed and residual	Total	Exports	Total disappearance	Govt. owned	Privately owned 1/	Total
	Million bushels													
1978/79														
June-Sept.	313.1	581.7	0.3	895.1	14.7	---	1.8	224.8	241.3	7.9	249.2	1.5	644.4	645.9
Oct.-Dec.	645.9	---	0.1	646.0	10.3	---	1.8	84.2	96.3	3.4	99.7	2.5	543.8	546.3
Jan.-Mar.	546.3	---	0.2	546.5	10.7	---	7.2	146.3	164.2	0.7	164.9	2.7	378.9	381.6
Apr.-May	381.6	---	0.1	381.7	5.3	---	25.3	70.4	101.0	0.7	101.7	2.7	277.3	280.0
Mkt. year	313.1	581.7	0.7	895.5	41.0	---	36.1	525.7	602.8	12.7	615.5	2.7	277.3	280.0
1979/80														
June-Sept.	280.0	526.6	0.3	806.9	14.6	---	1.7	221.6	237.9	0.9	238.8	2.6	565.5	568.1
Oct.-Dec.	568.1	---	0.2	568.3	10.4	---	1.7	77.5	89.6	1.9	91.5	2.6	474.2	476.8
Jan.-Mar.	476.8	---	0.2	477.0	10.3	---	6.9	119.7	136.9	0.5	137.4	2.7	336.9	339.6
Apr.-May	339.6	---	0.2	339.8	5.4	---	24.3	72.9	102.6	0.8	103.4	2.7	233.7	236.4
Mkt. year	280.0	526.6	0.9	807.5	40.7	---	34.6	491.7	567.0	4.1	571.1	2.7	233.7	236.4
1980/81														
June-Sept.	236.4	458.3	0.6	695.3	15.0	---	1.8	190.0	206.8	3.9	210.7	2.7	481.9	484.6
Oct.-Dec.	484.6	---	0.2	484.8	10.0	---	1.8	79.2	91.0	2.8	93.8	2.7	388.3	391.0
Jan.-Mar.	391.0	---	0.3	391.3	10.0	---	7.0	115.6	132.6	2.6	135.2	2.5	253.6	256.1
Apr.-May	256.1	---	0.2	256.3	6.0	---	22.4	47.0	75.4	4.0	79.4	2.5	174.4	176.9
Mkt. year	236.4	458.3	1.3	696.0	41.0	---	33.0	431.8	505.8	13.3	519.1	2.5	174.4	176.9
1981/82														
June-Sept.	176.9	509.2	0.3	686.4	16.0	---	2.0	206.7	224.7	3.2	227.9	1.7	456.8	458.5
Oct.-Dec.	458.5	---	0.2	458.7	10.0	---	2.0	80.3	92.3	1.2	93.5	1.7	363.5	365.2
Jan.-Mar.	365.2	---	0.2	365.4	10.0	---	7.3	110.0	127.3	1.2	128.5	1.7	235.2	236.9
Apr.-May	236.9	---	0.9	237.8	5.2	---	24.1	55.5	84.8	1.0	85.8	0.7	151.3	152.0
Mkt. year	176.9	509.2	1.6	687.7	41.2	---	35.4	452.5	529.1	6.6	535.7	0.7	151.3	152.0
1982/83														
June-Sept.	152.0	617.0	0.8	769.8	16.2	---	2.0	169.0	187.2	1.3	188.5	0.6	580.7	581.3
Oct.-Dec.	581.3	---	0.2	581.5	10.0	---	2.0	94.9	106.9	1.0	107.9	0.7	472.9	473.6
Jan.-Mar.														
Apr.-May														
Mkt. year														

1/ Includes quantity under loan and farmer-owned reserve.

Table 11.--Average prices received by farmers, United States, by months, 1978-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average weighted by sales 1/
							Dollars per bushel						
Corn													
1978	1.97	2.02	2.09	2.11	2.18	2.22	2.27	2.35	2.49	2.64	2.54	2.51	2.25
1979	2.41	2.27	2.38	2.45	2.39	2.40	2.36	2.42	2.49	2.73	2.92	3.01	2.52
1980	2.99	3.10	3.19	3.19	3.22	3.25	3.24	3.24	3.17	3.14	2.87	2.55	3.11
1981	2.45	2.34	2.39	2.54	2.44	2.46	2.55	2.60	2.57	2.50	2.30	2.15	2.50
1982	1.98	2.13	2.26	*2.32									
Sorghum							Dollars per cwt						
1978	3.35	3.45	3.58	3.54	3.55	3.54	3.58	3.66	4.30	4.46	4.27	4.24	3.59
1979	3.90	3.99	3.90	4.05	3.98	4.05	3.96	4.04	4.49	4.95	5.12	5.12	4.18
1980	5.36	5.48	5.49	5.48	5.33	5.17	5.25	5.16	5.03	4.84	4.55	4.07	5.25
1981	3.90	3.87	3.95	4.09	4.08	4.00	4.10	4.35	4.17	3.96	3.95	3.80	4.27
1982	3.70	3.78	3.97	*4.14									

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Average weighted by sales 1/
							Dollars per bushel						
Oats													
1978	1.16	1.08	1.06	1.06	1.08	1.15	1.19	1.22	1.25	1.27	1.29	1.29	1.20
1979	1.35	1.33	1.24	1.29	1.31	1.41	1.31	1.39	1.37	1.34	1.38	1.43	1.36
1980	1.48	1.50	1.53	1.63	1.65	1.84	1.92	1.98	2.01	2.08	2.05	2.05	1.79
1981	1.99	1.84	1.72	1.74	1.78	1.88	1.94	1.97	1.99	2.02	1.99	1.99	1.89
1982	1.88	1.57	1.39	1.35	1.32	1.40	1.44	*1.47					
Barley													
1978	2.04	1.83	1.86	1.85	1.90	1.93	1.90	1.95	1.87	1.89	1.96	2.07	1.92
1979	2.30	2.22	2.23	2.33	2.32	2.40	2.32	2.27	2.23	2.18	2.15	2.21	2.29
1980	2.36	2.52	2.59	2.65	2.81	2.90	2.97	3.09	3.05	3.04	3.04	3.00	2.86
1981	2.94	2.41	2.37	2.44	2.38	2.49	2.48	2.50	2.40	2.40	2.42	2.56	2.45
1982	2.39	2.16	2.20	2.17	1.98	2.06	2.19	*2.08					

Item and year beginning May 1	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Average weighted by sales
							Dollars per ton						
Hay (mid-month)													
1978	55.30	51.20	49.20	49.00	47.80	47.10	46.40	47.30	48.90	50.70	50.20	49.90	49.80
1979	65.60	58.00	56.00	57.50	59.00	60.80	58.90	60.10	59.10	60.00	57.40	60.10	59.50
1980	69.30	65.10	67.00	67.20	71.90	77.20	75.00	74.80	72.80	72.50	69.80	68.20	71.00
1981	75.30	66.90	64.00	63.90	62.70	64.80	65.40	65.70	67.90	69.90	69.50	73.10	67.43
1982	77.10	70.90	66.60	65.00	64.80	67.60	68.10	68.80	70.10				

1/ Includes an allowance for unredeemed loans and purchase agreement deliveries valued at the average loan rate, by States; excludes Government payments.
*Preliminary.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 12.--Cash prices at principal markets, 1978-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Simple average
						Dollars per bushel							
CORN No. 2 Yellow, St. Louis 1/													
1978	2.13	2.25	2.30	2.33	2.41	2.47	2.53	2.60	2.77	2.95	2.73	2.68	2.51
1979	2.59	2.51	2.66	2.50	2.64	2.54	2.53	2.60	2.66	3.01	3.31	3.26	2.73
1980	3.35	3.53	3.59	3.60	3.47	3.42	3.49	3.42	3.33	3.34	3.03	2.61	3.35
1981	2.53	2.59	2.54	2.65	2.61	2.66	2.78	2.78	2.75	2.68	2.42	2.32	2.61
1982	2.32	2.43	2.49	*2.52									
CORN No. 2 Yellow, Omaha													
1978	2.05	2.04	2.09	2.12	2.13	2.17	2.26	2.40	2.59	2.68	2.45	2.37	2.28
1979	2.37	2.32	2.36	2.26	2.33	2.23	2.32	2.43	2.50	2.81	2.98	3.01	2.49
1980	3.16	3.34	3.30	3.29	3.18	3.17	3.24	3.24	3.19	3.15	2.79	2.51	3.13
1981	2.44	2.39	2.37	2.47	2.45	2.48	2.61	2.65	2.65	2.54	2.23	2.23	2.46
1982	2.12	2.35	2.37	*2.42									
SORGHUM No. 2 Yellow, Kansas City						Dollars per cwt							
1978	3.61	3.67	3.64	3.71	3.73	3.77	3.81	3.92	4.41	4.89	4.44	4.34	4.00
1979	4.42	4.41	4.57	4.21	4.35	4.20	4.15	4.31	4.49	5.36	5.71	5.61	4.65
1980	5.65	5.91	5.82	5.79	5.52	5.46	5.49	5.38	5.23	5.29	4.58	4.16	5.36
1981	4.14	4.14	4.27	4.44	4.26	4.28	4.45	4.48	4.50	4.38	4.02	4.06	4.29
1982	3.85	4.25	4.37	*4.54									

Item and year beginning June 1	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Simple average
						Dollars per bushel							
OATS No. 2 Heavy, Minneapolis													
1978	1.36	1.24	1.28	1.36	1.39	1.47	1.40	1.47	1.54	1.60	1.48	1.55	1.43
1979	1.68	1.60	1.47	1.55	1.65	1.67	1.59	1.52	1.50	1.48	1.52	1.62	1.57
1980	1.67	1.80	1.70	1.86	1.96	2.15	2.16	2.20	2.25	2.23	2.21	2.23	2.04
1981	2.18	2.02	1.99	2.02	2.09	2.28	2.10	2.23	2.26	2.16	2.21	2.16	2.14
1982	2.12	1.87	1.53	1.51	1.51	1.67	1.67	*1.67					
BARLEY No. 2 or Better Feed, Minneapolis													
1978	1.84	1.71	1.68	1.77	1.81	1.88	1.79	1.71	1.69	1.86	1.89	1.96	1.80
1979	2.16	2.39	2.15	2.22	2.34	2.11	2.15	2.09	2.04	2.06	2.12	2.09	2.16
1980	2.15	2.48	2.39	2.43	2.77	3.03	2.75	2.81	2.90	2.63	2.51	2.39	2.60
1981	2.09	2.26	2.35	2.21	2.26	2.31	2.06	2.20	2.27	2.16	2.16	2.24	2.21
1982	2.12	1.85	1.72	1.69	1.54	1.58	1.59	*1.63					
BARLEY No. 3 or Better Malting, 65% or Better Plump, Minneapolis													
1978	2.39	2.13	2.19	2.27	2.26	2.47	2.40	2.30	2.33	2.46	2.59	2.73	2.38
1979	2.80	2.82	2.67	3.10	3.18	3.06	2.93	2.87	2.81	2.69	2.73	2.82	2.87
1980	2.99	3.36	3.27	3.63	3.80	3.88	3.77	3.75	3.83	3.71	3.84	3.80	3.64
1981	3.34	2.95	3.15	3.05	3.02	3.07	2.92	3.00	3.14	2.99	2.98	3.05	3.06
1982	2.93	2.63	2.48	2.37	2.42	2.45	2.37	*2.38					

1/ Effective April 1, 1982, reporting of Spot Rail Grain Bids at Chicago by the United States Department of Agriculture, AMS, Livestock and Grain Market News, was discontinued.
* Preliminary.

Source: Grain and Feed Market News, AMS, USDA.

Table 13.--Feed-price ratios for livestock, poultry, and milk, by months, 1978-83

Item and year beginning October 1	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Average
HOG/CORN, U.S. Basis 1/													
1978	25.8	23.4	23.0	24.0	24.1	21.8	19.4	18.4	15.9	14.4	14.3	14.8	19.9
1979	14.0	15.2	15.5	14.8	15.4	13.9	11.9	11.8	13.3	15.1	15.8	15.3	14.3
1980	15.8	14.7	13.8	12.8	12.8	11.9	12.0	12.6	15.0	15.7	17.1	19.1	14.4
1981	18.4	17.7	16.3	17.1	19.8	19.8	20.1	21.8	22.4	23.2	26.7	28.6	21.0
1982 2/	28.5	24.6	23.7	23.7									
BEEF-STEER/CORN, Omaha 3/													
1978	26.8	26.4	26.6	28.5	30.5	32.7	33.2	30.8	26.5	25.0	25.6	28.6	28.4
1979	27.8	28.9	29.1	29.4	29.0	30.0	27.2	26.6	26.6	25.1	24.3	23.1	27.3
1980	21.3	19.5	19.5	19.1	19.3	19.4	20.0	20.6	21.4	21.5	23.8	26.0	21.0
1981	25.2	25.0	25.0	24.6	25.9	26.5	26.5	27.2	26.5	26.1	29.2	27.5	26.3
1982 2/	27.7	25.1	25.2	24.5									
MILK/FEED, U.S. Basis 4/													
1978	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.5	1.5	1.4	1.5	1.5	1.5
1979	1.6	1.6	1.5	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.5
1980	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.7
1981	1.5	1.6	1.6	1.6	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.5
1982 2/	1.6	1.6	1.6	1.6									
EGG/FEED, U.S. Basis 5/													
1978	7.0	7.5	8.0	7.8	7.7	8.0	7.4	6.9	6.7	6.1	6.1	6.4	7.1
1979	6.1	6.8	7.3	6.6	5.9	6.3	6.0	5.3	5.5	5.7	6.0	6.2	6.1
1980	5.7	6.0	6.6	5.9	5.7	5.7	6.0	5.2	5.2	5.5	5.8	6.4	5.8
1981	6.5	7.2	6.7	6.6	6.8	7.2	6.6	5.6	5.3	5.7	5.3	6.0	6.3
1982 2/	6.3	6.3	6.0	5.7									
BROILER/FEED, U.S. Basis 6/													
1978	2.9	2.8	2.9	3.1	3.3	3.1	3.0	3.2	2.9	2.5	2.3	2.4	2.9
1979	2.2	2.6	2.6	2.8	2.6	2.5	2.3	2.5	2.6	3.3	3.0	2.9	2.7
1980	2.8	2.5	2.5	2.6	2.6	2.6	2.3	2.4	2.5	2.6	2.5	2.4	2.5
1981	2.4	2.4	2.3	2.6	2.6	2.6	2.4	2.6	2.7	2.6	2.4	2.6	2.5
1982 2/	2.5	2.5	2.4	2.6									
TURKEY/FEED, U.S. Basis 7/													
1978	5.0	5.1	5.4	5.0	4.6	4.3	4.3	4.2	3.9	3.5	3.7	3.7	4.4
1979	3.9	4.5	4.3	3.8	3.6	3.5	3.4	3.1	3.1	3.5	3.5	3.7	3.7
1980	3.9	3.8	3.5	3.1	3.1	3.2	3.0	3.1	3.2	3.3	3.2	3.1	3.3
1981	2.8	3.1	2.9	2.9	2.9	3.0	3.0	2.9	3.2	3.4	3.4	3.7	3.1
1982 2/	3.9	3.9	3.0	2.8									

1/ Number bushels of corn equal in value to 100 pounds of hog, live weight.
2/ Preliminary.
3/ Based on price of beef-steers 900-1,100 pounds, choice instead of average grade all steers previously published.
4/ Pounds 16 percent mixed dairy feed equal in value to 1 pound whole milk.
5/ Number of pounds of laying feed equal in value to 1 dozen eggs.
6/ Number of pounds of broiler grower feed equal in value to 1 pound broiler, live weight.
7/ Pounds of turkey grower feed equal in value to 1 pound turkey, live weight.

Source: Agricultural Prices, Crop Reporting Board, USDA.

Table 14.--Price trends, selected feeds and corn products

Item	Unit	Oct.-Sept. 1981/82 1/	1982 Sept.	1982 Oct.	1982 Nov.	1982 Dec.	1983 Jan. 1/
WHOLESALE, MOSTLY BULK 2/							
Soybean meal, 44% solvent, Decatur	$/ton	183	161	157	173	179	180
Soybean meal, high protein, Decatur	"	197	173	169	185	190	192
Cottonseed meal, 41% expeller, Memphis	"	160	159	151	168	181	186
Linseed meal, 34% solvent, Minneapolis	"	152	140	136	136	135	135
Peanut meal, Southeast mills	"	182	177	182	188	192	191
Meat meal, Ill. prod. pts.	"	208	190	185	210	209	224
Fishmeal, 65% protein, East Coast	"	352	311	324	346	370	375
Gluten feed, Chicago	"	113	115	110	111	120	125
Gluten meal, 60% protein, Chicago	"	242	221	208	215	246	265
Brewers' dried grains, Chicago-Milwaukee	"	97	91	103	102	109	113
Distillers' dried grain, Lawrenceburg	"	146	138	136	137	137	139
Feather meal, Jackson, Miss.	"	249	206	208	226	253	256
Wheat bran, Kansas City	"	74	64	63	76	78	85
Wheat middlings, Kansas City	"	82	83	80	95	82	85
Rice bran, f.o.b. mills, Arkansas	"	67	62	67	81	85	80
Hominy feed, Ill. pts.	"	79	74	73	82	80	78
Alfalfa meal, dehy., Kansas City	"	106	105	110	116	119	122
Cane molasses, New Orleans	"	51	48	44	40	41	44
Molasses beet pulp, Los Angeles	"	115	115	119	119	123	121
Animal fat, Ill. prod. Pts.	"	14.2	12.0	11.5	11.5	11.2	11.4
Urea, 42% N., Fort Worth	"	219	211	211	211	225	210
Corn, No. 2 white, Kansas City	$/bu.	2.59	2.37	2.28	2.56	2.99	3.08
PRICES PAID, U.S. BASIS 3/							
Soybean meal, 44%	$/cwt.	13.73	13.20	12.90	12.90	13.00	13.10
Cottonseed meal, 41%	"	13.77	13.60	13.40	13.30	13.30	13.50
Wheat bran	"	9.94	9.72	9.74	9.72	9.78	9.77
Wheat middlings	"	9.52	9.31	9.34	9.29	9.35	9.37
Broiler grower feed	$/ton	213	209	203	198	201	202
Laying feed	"	193	188	185	182	185	186
Turkey grower feed	"	231	225	221	222	225	226
Chick starter	"	215	209	204	202	208	205
Dairy feed, 16%	"	179	173	171	172	174	175
Beef cattle concentrate, 32-36%	$/cwt.	11.52	11.30	11.10	11.30	11.60	11.60
Hog concentrate, 38-42% protein	"	14.98	14.40	14.20	14.30	14.60	14.80
Stock salt	"	6.02	6.13	6.16	6.10	6.09	6.09
CORN PRODUCTS, WHOLESALE 4/							
Corn meal, New York							
White	$/cwt.	14.19	13.38	13.25	13.49	13.47	13.79
Yellow	"	11.77	11.39	11.23	11.49	11.47	11.79
Grits (brewers'), Chicago	"	9.05	8.54	8.35	8.61	8.59	8.91
Syrup, Chicago West	c/lb.	14.14	12.69	12.75	12.75	12.75	12.75
Sugar (dextrose), Chicago West	"	25.00	25.00	25.00	25.00	23.95	23.25
High-fructose (dried weight in tank cars), Chicago West	"	15.93	15.85	15.85	11.27	11.27	11.27
Corn starch, f.o.b. Midwest	$/cwt.	10.28	9.88	9.31	9.31	9.31	9.31

1/ Preliminary. 2/ Grain and Feed Market News, AMS, USDA, except urea which is from Feedstuffs, Miller Publishing Co., Minneapolis, Minnesota. 3/ Agricultural Prices, CRB, USDA. 4/ Milling and Baking News, Kansas City, Missouri, except starch which is from industry sources.

Table 15.--Hay (all): acreage, supply, and disappearance, 1977-82

Item	Unit	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83 1/
Acreage harvested	Mil. acres	61.0	62.1	61.7	59.4	60.2	60.7
Yield per acre	Tons	2.17	2.32	2.40	2.21	2.38	2.51
Carryover (May 1)	Mil. short tons	19.5	24.2	30.1	33.3	25.4	25.2
Production	"	132.2	143.8	147.8	131.0	143.2	152.4
Supply	"	151.7	168.0	177.9	164.3	168.6	177.6
Disappearance	"	127.5	137.9	144.6	138.9	143.4	---
Roughage-consuming animal units (RCAU)	Mil. units	89.5	86.0	87.5	89.9	91.8	90.5
Supply per RCAU	Tons	1.69	1.95	2.03	1.83	1.84	1.96
Disappearance per RCAU	"	1.42	1.60	1.65	1.55	1.56	---

1/ January 1983 crop indications.

Earnings

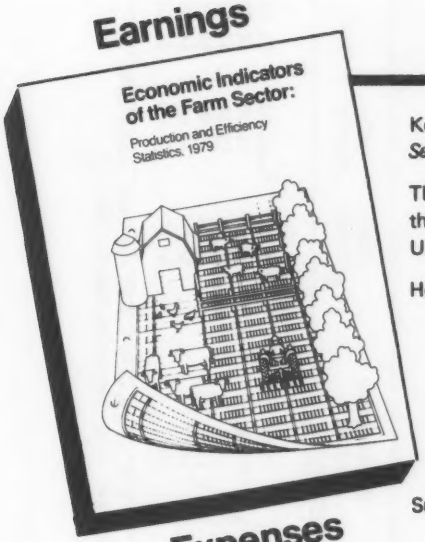

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Table 16.--Hay production, pasture-range index (August 1), and prices received by farmers, 1977-82

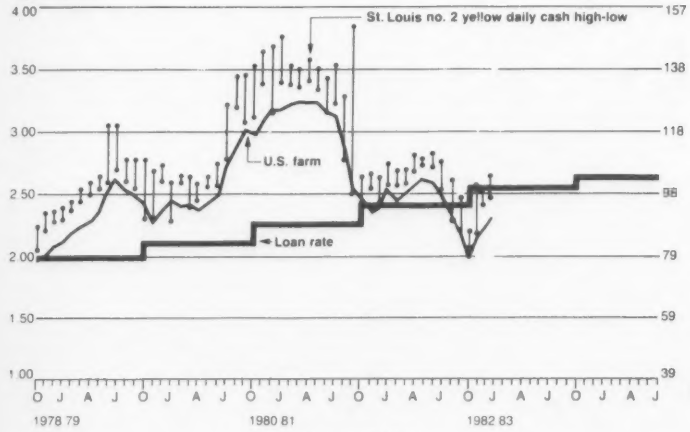
Year	North-east	Lake States	Corn Belt	Northern Plains	Appa-lachin	South-east	Delta States	Southern Plains	Mountain	Pacific	United States 1/
						Thousand tons					
1977											
Hay production	11,055	22,993	22,748	22,320	7,390	2,651	3,403	8,900	18,057	12,694	132,211
Pasture-range index	67	66	65	71	62	44	63	64	65	54	64
1978											
Hay production	12,645	24,298	24,382	26,793	8,261	3,118	3,525	8,568	19,761	12,366	143,817
Pasture-range index	77	89	86	87	85	72	71	51	82	93	77
1979											
Hay production	12,748	25,298	24,465	26,678	8,308	3,429	3,910	11,099	19,555	12,357	147,847
Pasture-range index	77	85	85	84	93	88	89	85	76	75	84
1980											
Hay production	12,707	23,504	21,861	19,191	7,929	2,673	2,873	7,830	19,248	13,254	131,070
Pasture-range index	74	73	66	42	74	64	56	41	76	91	60
1981											
Hay production	12,727	23,155	24,204	23,627	8,475	3,070	3,860	10,266	20,538	13,279	143,201
Pasture-range index	84	82	90	76	88	65	82	78	78	89	82
1982											
Hay production	13,224	25,801	24,480	28,046	8,810	3,488	3,931	9,884	21,248	13,512	152,424
Pasture-range index	83	78	89	92	87	88	85	80	84	86	85

Mid-December prices	Penn-sylvania	Wis-consin	Iowa	Kansas	Georgia	Arkansas	Texas	Colorado	Cali-fornia	United States
						Dollars per tons				
1977	73.50	48.50	43.50	38.50	62.00	38.00	52.00	54.50	48.50	49.50
1978	61.50	35.00	44.50	49.50	57.50	43.00	58.00	49.00	60.50	47.30
1979	57.50	29.50	51.50	48.00	51.50	47.50	61.00	53.50	97.00	60.10
1980	80.00	39.00	50.50	72.00	71.00	54.00	83.00	71.50	101.00	74.80
1981	85.00	72.00	54.00	64.00	---	78.00	60.00	65.00	75.00	65.70
1982	87.00	71.00	52.00	57.00	---	46.00	58.00	68.00	93.00	68.80

1/ U.S. price weighted by regional production.
Source: Crop Reporting Board, USDA.

*US GOVERNMENT PRINTING OFFICE:1983-380-932/ERS-1552

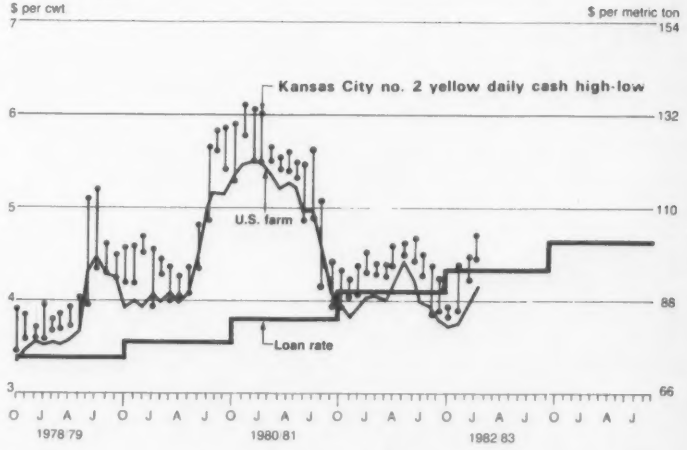
Corn Prices
$ per bushel | $ per metric ton



Year beginning October

USDA | Neg. ERS 382-83(2)

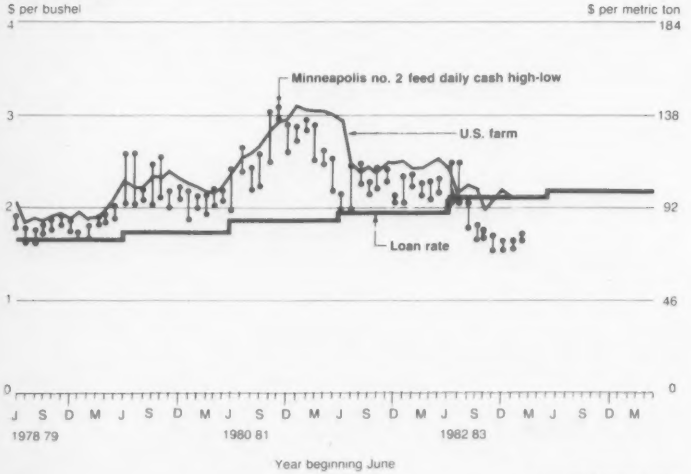
Sorghum Prices
$ per cwt | $ per metric ton



Year beginning October

USDA | Neg. ERS 386-83(2)

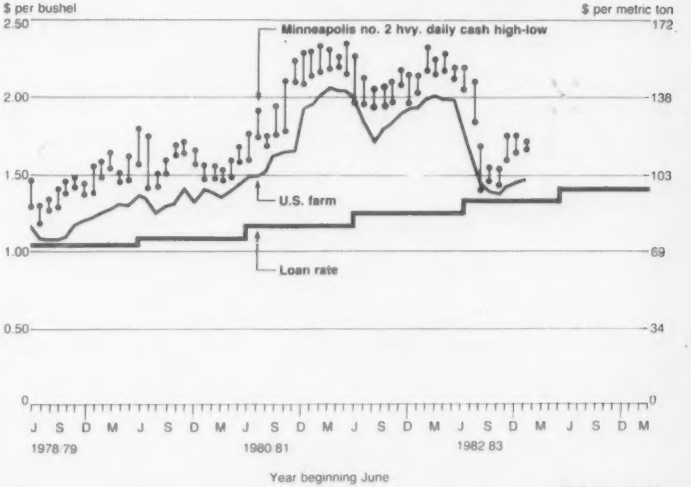
Barley Prices
$ per bushel | $ per metric ton



Year beginning June

USDA | Neg. ERS 955-83(2)

Oat Prices
$ per bushel | $ per metric ton



Year beginning June

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